MOTOR TREND

The Magazine for a Motoring World

APRIL 1951
25c

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INSIDE STORY ON THE PHOENIX PROJECT

by Harry Cushing

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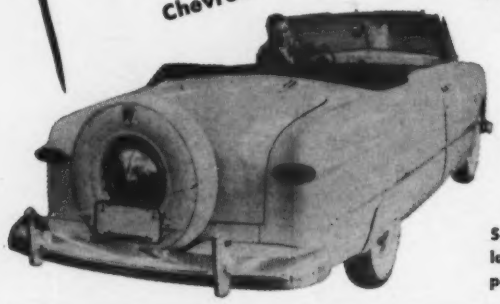

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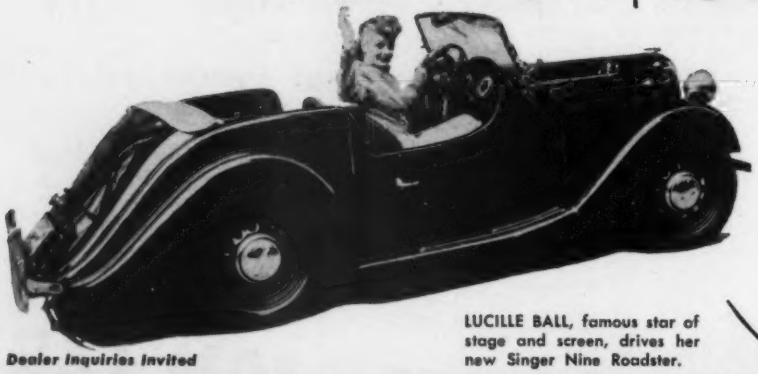

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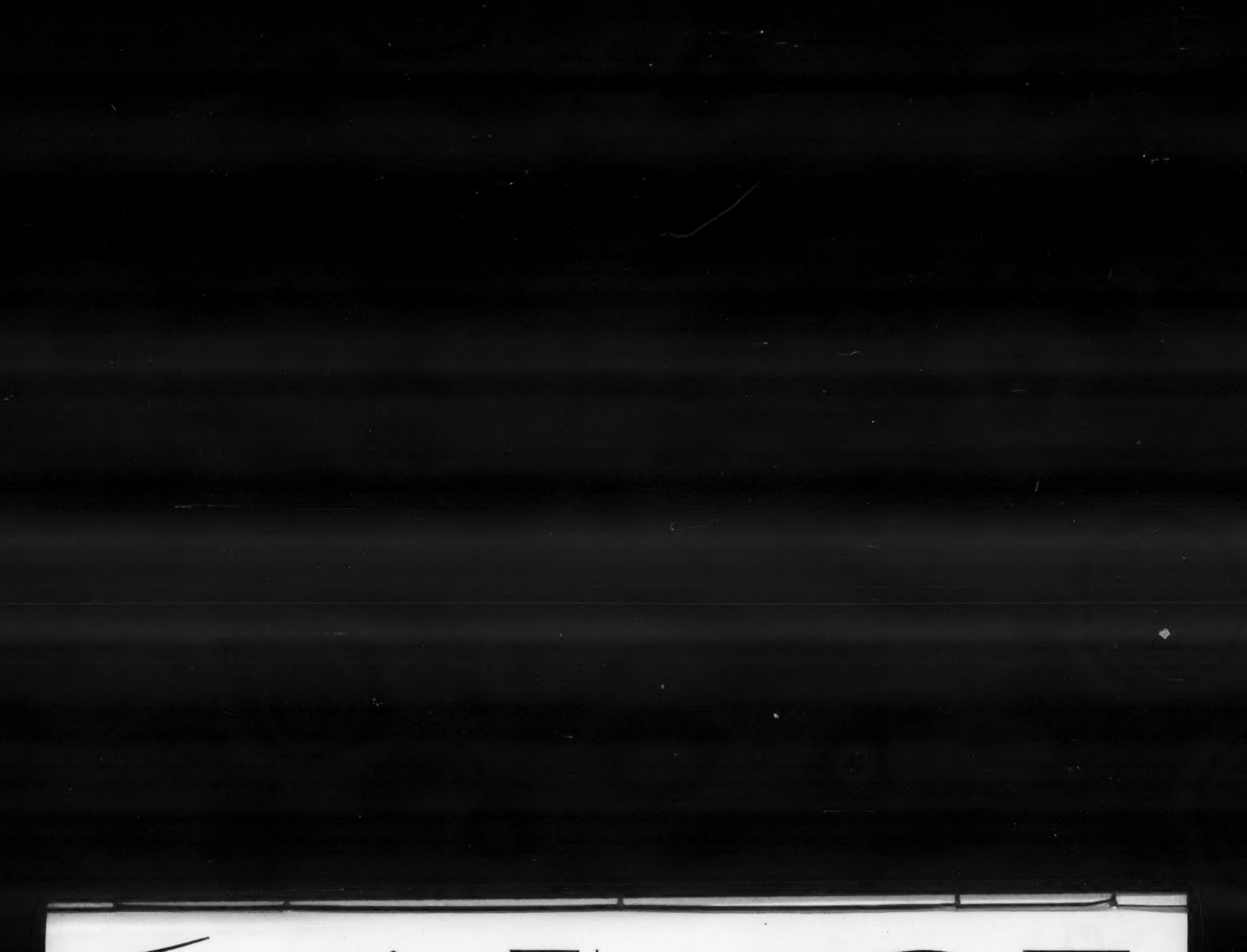


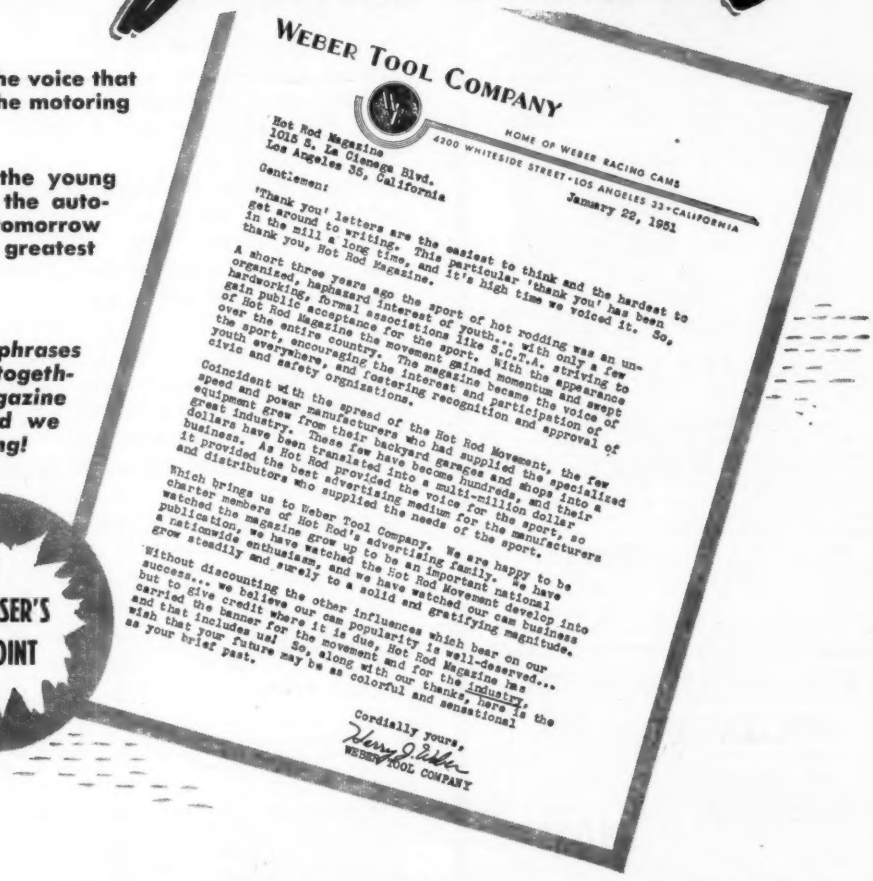
Voice of the Field

Hot Rod Magazine is the voice that reaches the youth of the motoring field.

The hot rodders are the young men who will power the automotive industry of tomorrow and keep America the greatest nation on wheels.

As Mr. Weber so aptly phrases it, we have grown up together—the sport, the magazine and the industry. And we intend to keep growing!

AN ADVERTISER'S VIEWPOINT



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Hot Rod Magazine
1015 S. La Cienega Blvd.
Los Angeles 35, California

January 22, 1951

Gentlemen:

"Thank you" letters are the easiest to think and the hardest to get around to writing. This particular "thank you" has been in the mill a long time, and it's high time we voiced it. So, thank you, Hot Rod Magazine.

A short three years ago the sport of hot rodding was an unorganized, haphazard interest of youth... with only a few hardworking, formal associations like S.C.T.A. striving to gain public acceptance for the sport. With the appearance of Hot Rod Magazine the movement gained momentum and swept over the entire country. The magazine became the voice of the sport, encouraging the interest and participation of youth everywhere, and fostering recognition and approval of civic and safety orgnizations.

Coincident with the spread of the Hot Rod Movement, the few speed and power manufacturers who had supplied the specialized equipment grew from their backyard garages and shops into a great industry. These few have become hundreds, and their dollars have been translated into a multi-million dollar business. As Hot Rod provided the voice for the sport, so it provided the best advertising medium for the manufacturers and distributors who supplied the needs of the sport.

Which brings us to Weber Tool Company. We are happy to be charter members of Hot Rod's advertising family. We have watched the magazine grow up to be an important national publication, we have watched the Hot Rod Movement develop into a nationwide enthusiasm, and we have watched our cam business grow steadily and surely to a solid and gratifying magnitude.

Without discounting the other influences which bear on our success... we believe our cam popularity is well-deserved... but to give credit where it is due, Hot Rod Magazine has carried the banner for the movement and for the industry, and that includes us! So, along with our thanks, here is the wish that your future may be as colorful and sensational as your brief past.

Cordially yours,
Harry J. Weber
WEBER TOOL COMPANY

Have you an engineer of the future in your family? Then give him Hot Rod Magazine to teach him the importance of automotive safety and efficiency.

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MOTOR Trend

The Magazine for a Motoring World

APRIL 1951 Published Monthly VOL. 3 • NO. 4

CONTENTS

COVER: The atom car of tomorrow, as visualized by a noted atomic research scientist and as drawn by Al Crundall. Read about the possibilities of this amazing mode of transportation on page 15. It's an exclusive. Incidentally, the background for this car on our first full-color cover is that of the atomic bomb explosion at Bikini.

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HENRY J CONTEST . . .

WHEN we asked you what YOU thought the Henry J convertible would look like (MOTOR TREND, Feb. '51), we expected a number of good contest entries. We optimistically announced (in our rules) that the winning design would be published in the April 1951 issue.

We weren't counting on the terrific interest this car, and a design contest, would generate (although we should have known better from the Ford Anglia Body Design Contest). As it was, on the day before our final deadline for this issue we received 75 additional entries. This, of course, made it impossible to select a final winner and we are therefore postponing the announcement until our May issue.

It is unfortunate that, due to world conditions, the Henry J convertible will not be built (see "Spotlight On Detroit"). However, there is still enough speculative blood in all of us to want to know what it will look like, when it appears.

Watch for the winner next month. —W.W.

YOUR EDITOR SAYS . . .

PERHAPS the most frequent question we've been asked in recent weeks has been, "Do you think that I'll be able to get a new car if I wait a few more months?"

This is a difficult question to answer, particularly since it has so many ramifications. In the first place, even top automotive men aren't predicting how long they will be able to continue volume production. They're in a position where they are going to produce anything the government asks them to and, at the same time, they must keep a watchful eye on the competition.

One thing about new cars is a certainty: there won't be as many of them around in a few months as there are now. And, inevitably, the proportion of people scrambling for them will be higher than ever.

Regardless if you're in the market for a new car or a used car, you should bear this in mind: If you need a car, buy it. If you don't need one, don't buy it. It's as simple as that. Don't be panicked into buying something you don't need. This not only applies to cars, but to tires, batteries and other accessories.

In spite of what some advertisements would have you believe, there is no shortage of tires. According to reliable informants, at the rate that synthetic rubber plants will be producing tires by April, there should be plenty of tires for all of us for a long time to come. Not only is it bad from a moral standpoint to buy unneeded tires, but it's foolish from a practical standpoint. Unused tires deteriorate rapidly—those tires under the bed certainly won't be new tires when you get around to putting them on your car.

Since rolling rubber is so important to our transportation and economy, this month's "Motor Whys" column, written for you by H. Wieand Bowman, concerns the subject of tire care. This is the type of information that will become increasingly important to all of us in the coming months.

In line with our general policy in these times, all problems that beset the average motorist in maintaining his car will be dealt with in future issues of MOTOR TREND—we'll tell you how to keep your car in the best possible condition, what items are on the market that could be of practical use to you, what new cars are good buys (through Motor Trials and Sports Trials), and what to do if you're shopping for a used car. This latter subject will be covered in an article now being written by our expert researcher, Staff Writer Gene Jaderquist.

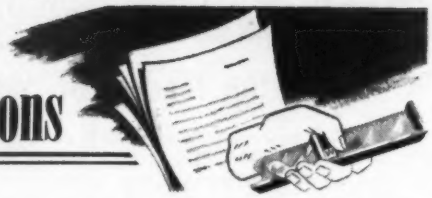
WE'RE PROUD of this issue of MOTOR TREND . . . and we'd like to tell you why. If you're a steady reader, you know why—if you're not, bear with us while we boast a bit.

This April issue marks a milestone in MOTOR TREND's short (20-month) career. It has two major improvements that we know it has needed for a long time—more pages and a full-color cover. The reason for more pages is obvious; the reason for the full-color cover is to do full justice to the beautiful cars selected for display on the cover.

As you look through the magazine, you'll notice that there are more (and larger) photos, additional features (the nostalgic "Duster Data," the comical "The Speeder," and the thought-provoking "What's Your Idea?), plus expanded features ("Tendance Continentale," "Classic Comments," "Customs—Coast to Coast," and "Sell 'N' Swap").

With the extra pages, we'll be able to bring you coverage of more national events, better pictures of custom cars, additional general interest features, and, in fact, more of everything YOU have asked for. We only ask, in return, that you continue to let us know what YOU want. —W. W.

Reader Reflections



Letters published in this department are the opinions of the writers and are not to be construed as those of the editors. Address correspondence to: Reader Reflections, MOTOR TREND, 1015 South La Cienega Boulevard, Los Angeles 35, California.

FORECASTER BY PROXY

Gentlemen:

I have read your publication avidly since its launching some two years ago. [20 months old this issue.—Ed.] In my opinion it far outreaches in scope the modern automobile, classic cars, racing, and other information reporting done by any other auto publications to date. A particularly good job is being done in your reporting the performance and statistics of new automobiles manufactured in the United States.

I follow with interest your column by Harry Cushing, "Spotlight on Detroit." On several occasions I have mentioned information contained in it to friends who are constantly amazed by my knowledge of apparently unpublished new car information. For example: when Studebaker announced their new V-8 engine it was a surprise to most people. I had read it in Mr. Cushing's column some months before, and had already forecast the fact to several people. They now consider me an authority on new car previews.

Norman T. DeGolyer, Jr.
Washington, D. C.

REQUEST FOR RECORDS

Gentlemen:

From my point of view perhaps the "Motor Trials" reports are of most interest, as they would likely be to most people in this part of the country [Canada]. Our cars, as probably you know, are identically the same as yours, although some of the late models (Bel Air), etc. are slower to show on our market.

I'm wondering if in some future issue you could print a list of official AAA records, also explaining what the different classes "A," "B," and "C" represent. It should be of interest to a lot of us who are not clear on the subject. Or am I a minority of one?

J. Ternan
Edmonton, Alberta, Canada

—So far, you are. But we bet you'll soon have company.—Editor

AVID READERS

Gentlemen:

Enclosed find 25c in coin. Please send me the January issue of MOTOR TREND. And within this quarter hangs a tale . . .

For the past three weeks I have been asking my local newsman, "Has the latest copy of MOTOR TREND come in yet?," to be told emphatically—no. Tonight, the wild look in my eyes and the haggard expression about my eyes made him take pity upon me; with a magnanimous wave of his arm he indicated the niche reserved for THE magazine. After kissing his print-blackened fingers and dropping two bits into his grubby little hand, I hurried home to feast my orbs on the greatest little motoring mag in the country.

The first article I read is "Your Editor Says." "Have you looked for MOTOR TREND on the newsstand and not been able to find it?" It starts off. (Have I!!!) . . . Reading further I discover to my horror that I have the FEBRUARY issue! I still don't know wha' hoppon to January . . .

Therefore, PLEASE rush to me . . . the January copy of M.T.

Rod Hindmarsh
Brooklyn, N. Y.

Gentlemen:

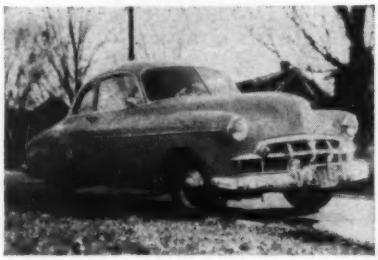
A few of my friends and I have formed a Motor Trend Club in Chicago. We all think that MOTOR TREND is America's best automotive magazine. We also think that Lewis Simon's articles are the best thing that ever happened to M.T. . . .

Would you please settle an argument for us? What was the first commercial auto equipped with four wheel brakes? I say Ford, other opinions range from Duesenberg to Packard. . . .

Robert Ireland
Chicago, Ill.

—You lose. According to your favorite M.T. writer, ". . . In the first year of the second decade, the first production Duesenberg . . . had . . . the first four-wheel hydraulic brakes." See "This Changing World," March 1951 M.T.—Editor

CUSTOM LINE-UP



Gentlemen:

. . . My car isn't changed too much, but I think it is much more smooth than the stock job, as the total cost, including new paint, was only $125. The hood and deck are shaved, but the hood has a chrome strip down the middle to where the curve begins, the "De luxe" insignia on the fenders has been removed, as has the chrome strip over the rear fenders, plus chrome wheels and added grille bars; the paint is Ford "Sportsman Green" lacquer.

Many people have asked me if it's a new model Chevrolet, or just what it is. I am very well pleased with it and most of the changes were adapted from cars featured in your magazine.

Bill Reeves
Lexington, Va.

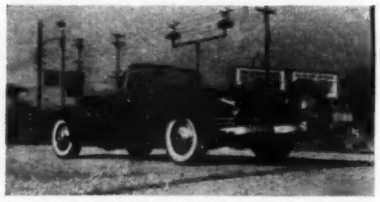
Gentlemen:

. . . I thought maybe you would like to put this one in [your magazine]. It's a 1939 Ford. As you can see, there are a lot of changes made. I put in a '49 Merc grille, a racing type exhaust, which I designed myself, leopard skin interiors, zebra skin seat covers, '49 Merc steering wheel, '48 Ford bumpers, rear lowered four ins. There is a lot more that I did not mention.

Domenick Jiardine, Jr.
Kenosha, Wis.

Gentlemen:

I am enclosing several photos of a 1941 Cadillac belonging to J. B. Stoner, owner of the Knoxville Trade School. The car originally was a '41 Cad sedan, which had been burned. The hood has been lengthened 18 ins. by adding to the cowl and moving the dash, seats



and steering control back. The steering column was cut in two and a universal joint added which does not interfere with the steering. The trunk lid is a '41 Buick coupe lid. Rear bumper is a rebuilt '49 Chevrolet. Top lifts off and is upholstered inside. The work was all done here in the school Mr. Stoner owns. It took a year to rebuild.

Norman L. Harris
Knoxville, Tenn.

Gentlemen:

. . . Being in the Navy and in California and seeing a lot of custom creations out there gave me a few ideas for my '48 Ford.

Shortly after buying my car I had the hood and deck lid shaved and license sunk. This I believe set the pace for a lot of others I have seen since and also since your magazine has been published.

The interior is done up in red and white

plastic leather, also the dash panel, door rails and window mouldings are all chrome.

It is powered by a full house and has a Belond Equa-flo exhaust system.

Future plans call for a '50 Frazer grille, '50 Lincoln tail lights, sealing in of the fenders and a chopped top. This, I think, is just enough to give it that different custom look.

Al Wier
St. Louis, Mo.

WASH IT, DON'T WAX IT

Gentlemen:

. . . I must take exception to your article entitled "Polishes—Do You Polish and Wax Your Own Car?" (Jan. '51). In the third paragraph you state: "Unless you can afford to buy a new paint job every year, a wax coating on the paint is as essential as an oil coating on the bearings." I do believe in keeping an oil coating on the bearings but definitely not a wax coating on the paint. I offer my own car as proof which still has the original paint after nearly three years. This is a Dodge [Canadian], purchased new in 1948, and has never been waxed. I simply wash it down once a week with clear cold water and clean the finish once a year with a very mild cleaner recommended by the manufacturer. After 2½ years of this treatment, the finish sparkles and

does not have that "cloudy" look that most cars develop after continual waxing.

If Mr. Jaderquist is ever in this part of the country, I invite him to come and see for himself.

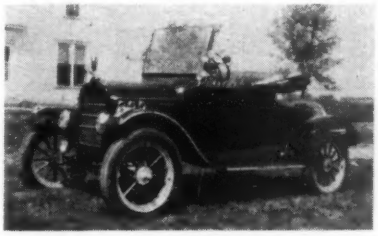
Albert D. Munn
Duncan, British Columbia

—A nice plug for Duncan, B.C. Must be very clean air up your way. American smog, salt and sand are not so considerate of auto paint. —Editor.

WHAT NEXT IN ACCESSORIES?

Gentlemen:

I saw the picture of the '49 Ford with all the accessories in your February '51 issue [letters] so I thought you might be interested in an accessory loaded '25 Ford.



The Model T has: 15 horns, twin signals, front and rear; two windshield wipers and washers; twin exhaust pipes; spare tire cover; stoplights; fender skirts; spotlight; driving lights; sealed beam headlights; automatic door lights and many others which can be seen in the picture.

Someday I hope to install a V8-60 engine so I will have more pickup than with the original engine.

W. T. McCorkendale
Kingsdale, Missouri

—With all that extra weight, will the V8-60 be enough? How about a twin Allison?—Editor

Gentlemen:

. . . It is rather detrimental to the industry to give the naive car owner, who wishes something different, examples of poor taste such as Mr. Taylor's '49 Ford. It makes a good hardware display but as a harmoniously appearing automobile it fails. One should let his guide in his choice of accessories be the present lines and proportions of his car. Any additions of parts or leading should be to further the grace and character in a car.

R. H. Gurr
Los Angeles, Calif.

—We cover all phases of motoring, and what we publish is not necessarily published as an example for others to follow. That's up to the individual.—Editor

ALL THE WAY TO KOREA

Gentlemen:

I found a copy of MOTOR TREND while in Pyongyang [Korea] and was surprised and pleased to find that there was such a publication. Although the magazine was all torn up and about half of the pages missing, I enjoyed it so much that I resolved that at the first opportunity I would subscribe to it. Enclosed is a money order for three dollars for one year's subscription. I will be eagerly awaiting the first copy.

About 10 years ago I did a little racing in

(*Continued on page fourteen*)

SOUND OFF!

NOTE: In an effort to serve as a sounding board for complaints about new cars, MOTOR TREND inaugurated "Sound Off" in the October '50 issue. In that issue and later issues we published excerpts from some of these letters so that we could do our share to acquaint automotive manufacturers with the likes and dislikes of the motoring public. If you have a complaint or suggestion for improvement, address your letter to "Sound Off," MOTOR TREND, 1015 So. La Cienega Blvd., Los Angeles 35, Calif. Letters published are the opinions of the writers and are not to be construed as those of the editors.—Editor.

HERE ARE the gripes about my new car—a 1950 Studebaker Champion without overdrive. (1) Excessive oil consumption, (2) front end will not stay in alignment for any length of time, (3) bumper guards fall off when somebody parks and hits the bumper, (4) clutch chatters in low gear, (5) shock absorbers squeak and can't be lubricated because they are placed inside the coil springs, and (6) the automatic choke makes a clicking noise in city traffic.

Oscar Gross
Providence, R.I.

★ ★ ★

WHY DOESN'T some smart manufacturing plant turn out a low-priced car with good general appeal, plus speed equipment for conversion? If conversion is as simple as the ads in your mag would lead us to believe, then an outfit like Ford could set up kits designed for their products thus cornering the market. . . .

Re Jeepster: The weak front end, a la Studebaker, the great distance from top to bottom. Basically, a great car for my money, yet that front end may prove to be a headache; and a fine body design has been somewhat spoiled by a top-high appearance. I need the headroom that a Rambler lacks, but would like to find a lowering kit, or something, that would bring the body closer to the wheels. . . .

G. J. Lundquist
White Bear Lake, Minn.

★ ★ ★

I BOUGHT a '50 Ford. Have had it back to the dealer three times to have the leaking around the windshield stopped. It still leaks. So do a lot of other new Fords. Do you suppose the Ford people could be browbeaten into devising a method to stop the owners of their product from getting wet feet every time it rains? . . .

Don Speedie
Newport News, Virginia

★ ★ ★

I HAVE a new '50 Merc, 2800 miles on odometer at present, car has overdrive. Main gripe is poor mileage. Daily driving is in light to no traffic, mileage varies 14-16 mpg, on a trip 17-18. My old '40 Merc (4.11:1 rear end) gave me 19-21 on a trip with no strain and no overdrive. After the 2000 mile check I expected improvement, instead it is worse. No. 2 gripe is the steering ratio, true the car drives nice on the road, but parking in a close place, your arms look like a flailing windmill. No. 3 gripe is the absence of the hand dash throttle. I've given in to the automatic chokes, but that dash throttle is pretty handy when charging up a low battery or warming up on a cold morning. . . .

Robert E. Thomas
Waukegan, Ill.

★ ★ ★

I CONSIDER my 1950 Pontiac, four months old, 7000 miles, Hydra-Matic, eight cyl., somewhat of a luxury. I only get 13-14 mpg in the city. I have not had it on the road enough to see if it is any more economical there. I do not like the low-pressure tires. I keep mine at 28-30 lbs. pressure.

The performance is quite commendable. My Pontiac has good roadability, handles well and has 'lots of power and speed. The Pontiac has

good "dig," as good or better than almost any car. . . .

N. B. Gibbel
Berkeley, Calif

★ ★ ★

I BOUGHT a 1949 Ford Tudor in March of 1949—average 17 mpg normal driving and over 20 mpg on trips with overdrive—usually drive over 50 mph. The disadvantage to overdrive unit is the free-wheeling feature—had to reline brakes at 25,000 miles and the front drums needed turning! Also replaced four shocks (why can't they be refillable and adjustable?). No major mechanical troubles so far except the steering idler arm, door locks and overdrive governor had to be replaced. Biggest complaint is the rattles in numerous places—maroon finish doesn't stand up well. Whitewall Firestone super-cushion tires are now bald at 35,000 miles (all five tires rotated at 5000 mile intervals)—had two in. foam rubber put under front seats. Seating and roominess rivals any of the larger cars in my opinion. Most of my small gripes have been corrected on the 1950 model. All in all, I am well pleased with it. Cruises well at 80 mph, have had it up to 95 mph and can do 0 to 60 in 14.7 seconds. Would like to see a glove compartment on the driver's side or a pocket in the left door. The gas pedal is at an awkward angle for continuous driving. The car won't hold straight in a cross wind, doesn't hold the road well on extremely rough roads at moderate speeds. . . .

Robert F. Pauley
So. Plainfield, N. J.

★ ★ ★

I OWN a '48 Packard club sedan (130 hp) and can take any curve at any speed within reason, IF I gun her around the curve. You have to gun her hard, then there is no tendency to roll. I got 16 mpg on a 2000 mile trip through the Smokey Mts., cruising at 60 whenever possible. I have installed Gane air flow needles in the carburetor. I admit the car has plenty of faults but don't think cornering ability is one of them.

It is a stinkeroo in snow and ice, too much iron in the front. Also had considerable trouble with front wheels getting out of alignment. Also, it has the world's worst glove compartment. . . .

John Rudolph
Oshkosh, Wis.

★ ★ ★

. . . I HAVE some complaints to make of my car ['50 Ford], although on the whole, I have gotten very good service from it.

My chief complaint is front end trouble. I have had it aligned on Bear machines three times and have had a new brake drum installed, in 17,000 miles of use. My front end is still giving trouble, and I suppose there is no way to fix it. . . .

J. R. Mathis
Bacoston, Ga.

★ ★ ★

I OWN a '50 Ford pickup truck. Others, as well as mine, have a whistling sound blowing through the grille at 40 to 55 mph. At that rate of speed the sound is terrible. . . .

Chuck Smith
Tyndall Field, Fla.

★ ★ ★

I HAVE a '50 Ford V8 with overdrive, and it's a fine car. Gas mileage is 20 to 22 mpg, cruising 60 to 70 mph, but why do these cars lean on their left side when they are empty? I have changed spring and shocks but no luck. With only one more thing to do, I shimmed the left front coil spring. This fixed the lean, but why does the Ford do this? . . .

Charles Simerlein
Cliffside Park, N. J.

CAR PRODUCTION MAY NOT DROP AS MUCH AS ORIGINALLY ESTIMATED

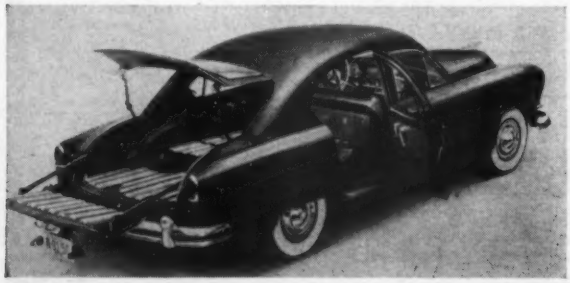
by Harry Cushing

DETROIT, MICHIGAN—Barring all-out war in the next 10 months, there is an excellent possibility that the automotive industry will make substantially more cars in 1951 than previous estimates have indicated. Just how many cars will be built is a question no one here is able to answer accurately as yet; but some mighty interesting forecasts are being made as the industry carries on the day-to-day task of sizing up the production job ahead. . . . Should, for instance, current production rates hold throughout the year, the car-buying public will find about 5,000,000 vehicles on the market in 1951. That is a reduction of only 25 per cent from last year's record output. Some sources indicate this figure will be ample to meet essential civilian transportation needs. . . . Substantiating the optimistic viewpoint is the word of the authoritative statistical agency, *Ward's Reports*. This organization says that production in the first six months of the year will drop only 150,000 units under the 3,100,000 turned out in the same period last year. *Ward's* points out that material shortages and restrictions are not apt to bite more deeply into production this time than did the 100-day Chrysler strike last year. Chrysler traditionally manufactures and sells around a quarter of the industry's annual output. . . . Looking beyond June, however, the auto industry has received a sharp warning from the National Production Authority to prepare for severe cutbacks in the last half of the production year. NPA estimates that by then military requirements will be taking 50 to 60 per cent of the metals essential to both peacetime and wartime manufacturing operations. Such a drain of materials will slash output by an equal amount. . . . Another pessimistic prediction comes from a prominent automobile sales manager, who says that by mid-August production will decline as much as 50 per cent from levels set in 1950. He adds that "cars are going to be higher-priced, and made of materials not as good as those used before." For example, some industry engineers assert that using stainless steel as a substitute for chrome bumpers is not as satisfactory from either the appearance or utility standpoint. . . . Car makers, however, will not substitute materials which affect safety or essential operating mechanism. Inferior materials, when finally forced upon the various companies, will most likely be found in trim and other non-functional areas. At least that is the way it worked out during the last period in the industry's history when materials were hard-to-get and numerous substitutions were utilized to keep production lines in operation.

MATERIAL SHORTAGES: By April 1, bright work will be considerably dimmed on new cars. The government ban of nickel will hit bumpers, grilles, hub caps, wheel rims, wheel covers, dash panels, gas caps, interior and exterior trim and lamp housings. . . . The shortage of copper is threatening to curtail the availability of car heaters and radios. As the government's restrictions on the use of this vital metal begin taking effect, the industry will apply the copper allotted to it for the building of radiators rather than accessories. . . . Mock-ups of 1951 cars look somewhat different than the production models you are now seeing on the street. According to one prominent Detroit automotive writer, parking lamps on one of the most recently introduced cars were on the fenders originally. Now they are located inside bombshell bumper guards. . . . Scrap iron is another important material that suddenly could go into short supply. Remember the scrap iron drives of the last war? Without it, quality steel for use in vehicles cannot be made. The Institute of Scrap Iron & Steel reports that one out of two cars built today is made possible by scrap. Some of that scrap may have come from cannons fired in the Civil War, or from explosives that sunk ships in the first World War. It is a material that is limited in quantity but is used over and over again. . . . Reports from Washington indicate that for the time being there will be no shortage of spare tires. Government-owned synthetic rubber factories are expected to be operating at full capacity by April which will eliminate the need to curtail the fifth tire, officials report.

WAR PRODUCTION NEWS: Scores of new military contracts have been placed with the automotive industry in recent weeks, but to date only a few are slated for Detroit-area factories. . . . As of this writing, nearly $1.4 billion worth of contracts are in the hands of auto makers, and the Army has revealed that almost 70 per cent of its appropriations is going now for tanks, vehicles, spare parts, guns and other mobile equipment. . . . At the recent annual meeting of the Society of Automotive Engineers, held this year in Detroit, Under-Secretary of the Army Archibald S. Alexander disclosed that by July, tank and automotive producers will be working on over $4 billion worth of equipment. According to reliable sources, however, this is the year when the industry will be tooling up for the big military job. By 1952 the planes, guns, tanks, rockets, engines and other equipment will begin coming off assembly lines in quantities reminiscent of World War II's amazing records. . . . Among the most recent military contracts assigned to the auto industry are jet aircraft engines, tanks and motors to Chrysler Corporation, and trucks to Dodge; rockets and high-velocity tank guns to Oldsmobile; tanks to Cadillac; aircraft to Kaiser-Frazer; military trailers to Fruehauf; and Jeeps to Willys-Overland. Ford is reported negotiating for a contract to manufacture guided missiles in one of its Detroit-area plants.

NEW CARS FOR 1951: The glittering parade of new cars continues, and this month the cycle is completed for another year with the introduction of Oldsmobile, Chrysler and Buick. In addition, Kaiser-Frazer, Lincoln and Ford have added new models to their recently announced 1951 lines. . . . *Oldsmobile* offers interesting styling and engineering changes in its series 88 and 98 lines; but, because of the government price ceilings imposed upon the industry this GM division may never bring out the radically redesigned 88 planned for this year. The firm had developed a car shorter, lower and with greater roadability and handling qualities, according to reliable automotive sources. To put it on the market called for a price increase of over $200; but it became economically unsound to go into volume production when price controls were established. Thus, styling of the 1951 series 88 is essentially the same as last year's car with the exception of a new medallion and a few



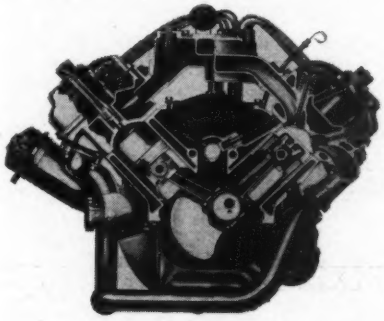
FOLDING rear seat arrangement of 1951 Kaiser Traveler utility sedan provides maximum floor loading area of 108 x 46 ins., for luggage, etc.

VICTORIA, newest model of Ford line, has wide rear window, similar to other "hardtop convertibles." Various two-tone colors are available

chrome trim changes. Oldsmobile expects to build around 8000 of these cars by April. Should price ceilings still be in effect then, there is a very good possibility the firm will discontinue 88 production altogether, automotive insiders say. If the government eases the auto price structure by that time you will see the completely rebuilt Oldsmobile 88 in the spring. The series 98 features

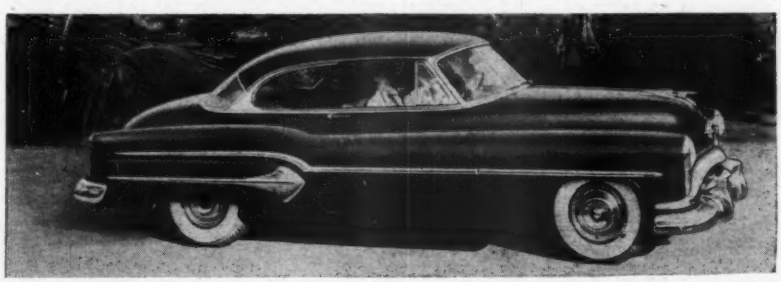
FEATURING a new 180 hp V-8 engine is the 1951 Chrysler New Yorker Newport. In '51 new engine will be used in New Yorkers, Imperials

CROSS-SECTION of new Chrysler V-8. Stroke/bore ratio is less than unity. Valve drive train uses hydraulic tappets. Combustion chamber is hemispherical. Compression ratio is 7.5:1



new leaf springs in the rear instead of coil springs, and a redesigned front-end suspension system. Rocket engine has been improved and compression ratio stepped up to 7.5 to 1. The same engine powers the 88 series. Other Oldsmobile 98 changes include the new Hydra-Matic Drive with instant reverse for rocking the car in snow, sand or mud; a new rear window; and restyled interior trim. . . . *Chrysler* is stressing five major engineering developments, headed by a sensational 180-hp V-8 engine. It is the most powerful engine in the industry and is designed to operate on gasoline with a 76 to 80 octane rating. Compression ratio is 7.5:1. Developed over a period of five years, at a cost of many millions of dollars, the engine has numerous unique design features. For example, it boasts a hemispherical combustion chamber with inclined overhead valve arrangement. This results in cutting down cylinder head deposits while giving very high efficiency of fuel utilization. With only 2.3 per cent more displacement (333 cu. ins.) than the 1950 Chrysler 8-cylinder in-line engine, the new powerplant has a maximum horsepower 33 per cent greater (180 @ 4000 rpm) and a maximum torque 16 per cent higher (312 ft. lbs. @ 2000 rpm). Total weight, complete with transmission, is 8 per cent less. The new V-8 is appearing only on the Imperial and New Yorker lines at present. Eventually it will be on all Chrysler cars except Plymouth, according to industry sources. On the Imperial line the engine is coupled with a specially-designed torque converter. Chrysler engineers report unusual economy for such a powerful engine. During development tests the new engine was run at 80 to 110 mph for 100,000 miles without damage, they say. In another test gasoline mileage hit 20 mpg, but they do not predict this will hold for all drivers under all conditions. A third test saw the car driven from Detroit to Los Angeles and back to Tulsa before a quart of oil had to be added. Other engineering advances include Power Steering as reported in last month's MOTOR TREND; the remarkable "Oriflow" shock absorbers, air-cooled brakes and a new electric window lift. . . . *Buick's* line of cars is highlighted by an improved Special Series with new body and engine. The new Special, with its redesigned body and chassis, is powered by the F-263 Fireball engine introduced on the Super Series in 1950. This engine develops 128 hp with Dynaflow and 120 hp with conventional transmission. Most significant change in appearance in Buick's entire line is the new bumper-grille combination. It contains 25 bars of stamped steel, located just behind the bumper. The grille is bolted to the bumper and flexes with it, reducing possibility of damage. Other new features to be found in all three Buick lines are a new hood ornament and emblem, new fender ornaments and moldings. There are 18 body types in the 1951 lines, and three series—Roadmaster, Super and Special. All lines feature the Riviera "hardtop convertible" style. . . . *Kaiser-Frazer* announces two additions to its 1951 lines, the popular Kaiser Traveler and the luxury "Golden Dragon" four-door sedan. The Travelers combine the style and comfort of a sedan with the cargo space of a station wagon. They come in four models. The Golden Dragon is styled in the fashionable "hardtop" manner, although it is a four-door sedan. It features special luxury upholstery and two-tone paint jobs. . . . *Lincoln* has brought out a custom version of the Cosmopolitan six-passenger coupe and called it the "Capri." It is a limited production model designed to satisfy demand for individuality not available in regular production-made cars. Features include vinyl-leather-covered steel roofs and custom tailored interiors. . . . With the announcement of the "Victoria," *Ford* joins the list of companies offering so-called "hardtop convertibles." It features an all-steel top and approximately 3,000 square inches of glass for clear visibility. Five single-tone and five two-tone body colors are available. . . . On the debit side, automotive rumors indicate that the long-time favorite, the Cadillac 61 Series will be discontinued. Price controls are said to be one of the causes behind this move.

ODDS AND ENDS: Kaiser-Frazer will not build the heralded Henry J convertible this year. Decision to cancel introduction of the new car comes as the result of the military situation, material problems and other conditions associated with the national defense. . . . Quietly, two automotive companies are preparing to celebrate Golden Jubilees in 1953, the national and international picture permitting. Both Ford and Buick already are drawing up plans and lining up personnel for the staging of exciting celebrations. . . . About 23 per cent of the passenger cars in use today are 13 years old or older, compared with four per cent in 1941, the Automobile Manufacturers Association reports. Another 33 per cent of cars are eight to 12 years old, as compared with 20 per cent in that category prior to World War II. . . . Ford recently completed a six-month automotive clay-modeling course, the first in the industry. Of 117 company employees who enrolled in the course, 10 graduates were accepted for regular work in the company's styling department. . . . In 1950, Fisher Body produced for General Motors' five passenger car divisions a grand total of 3,175,444 bodies and body sets. Making up this record-breaking production achievement were 2,480 different combinations of color, trim and other body options. . . . Packard recently awarded cash prizes of $3,575 to youthful winners of an automotive design contest it sponsored in cooperation with the world-famed Cranbrook Academy of Art, Bloomfield Hills, Michigan. The company believes that a number of the results of the contest will be reflected in Packard styling during the years to come. . . . The National Used Car Dealers Association has asked the government to rescind its order making credit terms on used cars one-third down and 15 months to pay off the balance.



OLDSMOBILE 98 Holiday Coupe. New model changes include new Hydra-Matic with instant reverse for rocking car in snow, sand or mud; restyled interior trim and larger rear window

"...and that taught me to drive"

THOMAS J. MEDLEY

DURING the last war I was driving a ¾-ton Weapons Carrier to the front in Germany with the other men in our surveying crew as passengers. We had started the long drive at 11:30 that night and we figured it would take until sometime the next morning before we reached our destination.

It was a clear cold night and the smooth highway was lined with large hardwood trees, typical in Europe. All of the other men were sleeping as we had been driving for several hours. I was very tired, too.

I had had no sleep since the previous night, but I tried to force myself to stay awake by singing, smoking, or any other diversion I could think of. This kept up for some time and I was sure that I could make it all right.

Just before dawn I began to doze off for an instant and would catch myself with a start in time to steer the small truck back onto the highway. I didn't realize it but the length of time between my dozing off until I awoke was becoming progressively longer. Once when I came to I was over on the shoulder of the road. As I straightened the truck up I felt the bed rub against one of the many trees lining the road. I hadn't even seen the tree but had lucked through that situation by the narrowest of margins. Unfortunately, my luck had run its course.

The skies were beginning to turn gray when I suddenly awoke with a start to see one of the trees directly in front of me no more than six ft. away from the front of the truck. In my drowsy state I didn't even have time to tighten my grip on the wheel, much less apply the brakes. The truck drove itself hard onto the unyielding tree, cutting a path right next to the motor block inside the left front wheel! The tree was just a few inches in front of the cowl when the truck stopped. It had cut a swath through the massive bumper, grille, radiator, sheet metal, driving front axle, and several frame members!

We were all shaken up, but no one was injured, for which I was truly thankful. I realized too late how foolish and dangerous it is to drive when you are tired and needing sleep. Since then on long drives at night when I begin to tire I can see that tree just ahead in the strong glare of the headlights. That's all the urging I need to begin looking for the nearest motel or a good place to park alongside the road where I can take a nap.

I learned the hard way but that's one mistake I'll never make again. "That taught me to drive."

—John E. Humphreys

SELL 'N' SWAP

NOTE: Due to the many requests for information on where to obtain hard-to-get parts, etc., MOTOR TREND has started this new column. If you're looking for a car that you can't find, if you have a car you'd like to sell or trade, check this column. We'll publish any reasonable request, first come, first served. Limit your copy to 25 words and base it on any of those shown below. We reserve the right to edit where necessary and are not responsible for accuracy of description—Editor.

INFORMATION—On speed equipment (especially supercharger) and replacement parts for English Prefect. Ernest Soderstrom, Jr. Geneva Cab Company, 311½ W. State St., Geneva, Ill.

FOR SALE—Miller front wheel drive race car. A Model 2-port Riley, Rudge quick detachable wheels, special mag and water pump casting, fast cam. First $450 offer takes. Harvey Marth, Herman, Minn.

FOR SALE—Christmas MoToR, 1907, and February 1908 MoToR magazine. Best offer. Floyd R. Edgington, 748 S. El Monte, Los Altos, Calif.

WANTED—MoToR Show numbers. Want to buy or obtain information where can be bought annual auto show issues of MoToR magazine issues previous to 1930. Jack V. Shy, 16542 Tracey, Detroit, Mich.

FOR SALE—French Citroen sedan, front wheel drive, torsion suspension, four-cyl. overhead valve. Step down construction similar to Hudson. Mechanically perfect. Original throughout. $575. H. Delaloye, 1624 Boren, Seattle 1, Wash.

FOR SALE—'39 Merc Custom, Carson Top, Buick fadeaways, dechromed, deck and fenders leaded, yellow and black leather interior, foam rubber padded. '46 Merc semi-race motor. Bob McDole, 4425 N. Greenview Ave., Chicago 40, Ill.

WANTED—1937 Cord convertible in good condition or 1941 Lincoln Continental convertible cabriolet. H. Wood, Robidoux Hotel, St. Joseph, Mo.

WANTED—Stutz, 1928-1934. Send details and price. Also need Stutz Blackhawk intake manifold. R. Schinke, 9632 Parnell, Chicago 28, Ill.

FOR SALE—Packard 1934 V-12 chassis only. Mechanically perfect. Partially rebuilt into roadster. Would make fine hobby for body specialist. J. A. Johnson, 3887 Chevy Chase Dr., Flintridge (Pasadena 3), Calif.

WANTED—Stanley Steamer engine and/or rear end '10-'18. M. F. Swarthout, 3048 Clarmeya Lane, Pasadena 8, Calif.

FOR SALE—Classic sports car. Duesenberg "J" convertible sedan, 1930. Appearance original. Mechanically perfect. Performance sensational. Due impending recall, must sell. W. C. Wilkinson, 1920 East Copper, Tucson, Arizona.

WANTED—Stutz DV32-1932-1935. Must be in immaculate condition and under 40,000 original miles. Any body type. Send information and snapshot to A. Ward Shanen, 2444 S. Orkney St., Philadelphia 48, Pa.

FOR SALE—Classic 1931 Auburn 898 convertible. 46,000 miles superb overhauled motor. New paint and top, extra tires. Sacrifice $380. Raymond Wolff, 2577 Teutonia, Milwaukee, Wis.

WANTED—Blower, positive displacement, centric, Zoller, or similar type required for use on BMW 327 (2-litre) engine. W. J. Weisbruch, 4150 Rhodes Ave., Studio City, Calif.

FOR SALE—Alfa-Romeo, 6C—2500 cc, d.o.h.v. engine good condition and complete. Best offer under $500 or trade for '49 Cad or Olds V-8. Ralph Hendrix, 245 Regent St., Hampton, Va.

WANTED—'29-'36 classic car. Duesenberg, Hisso RR, Cord L-29, Packard '32 V-12 Victoria, Mercedes, or what have you? Near N.Y. Describe fully with price. H. W. Uhle, 65 E. 92nd St., New York 28, N.Y.

FOR SALE—Auburn, 1931 four-door sedan, eight-cyl., engine just overhauled, new tires, tubes. $150. See at Mobil Station, 1728 North Western Avenue, Los Angeles 27. Walter H. Podesta.

WANTED—Stanley Steamer. Parts needed to build logging truck. Nicholas Valente, 110 Second St., Eureka, Calif.

FOR SALE—Two new Tucker car engines, 6-cyl. 166 hp, 335 cu. in. Suitable for front end installation—all aluminum. Price $425 each (complete). W. R. Jones, 1106 E. Cypress Ave., Covina, Calif.

WANTED—Customized car. Send price and photo to Jack Ressler, 822 Eighth St., North, Fargo, North Dakota.

FOR SALE—All kinds of used parts for '32 or '33 American Austin. Hall Callahan, 10 Old East, U.N.C., Chapel Hill, North Carolina.

WANTED—1936-1937 Cord, or car with same body style. Describe condition of body, engine and quote price. R. R. Tamsen, 5750 N. 73rd St., Milwaukee 16, Wis.

SWAP—Owner of 1937 Cord to form club to swap and sell parts and advice. Dexter Javos, Box 199, Bayville, New Jersey.

FOR SALE—9:1 compression ratio Eddie Meyers heads, dual manifold and carburetors for 1938-1948 Fords and Mercurys. Cost $165. Sell for $60.00. Robert E. Martin, 1409 N. Michigan Street, Pittsburg, Kans.

WANTED—1932-1933 Crown Imperial 8 sport phaeton, strictly stock. Good or repairable condition. Will pay reasonable price. Walter Henning, 55 Chestnut St., Rhinebeck, N.Y.

WANTED—Parts. Need good Olds 88 motor plus a Lincoln Continental car, any condition. R. J. Lesko, 65 Speer Ave., Clifton, N.J.

Reader Reflections

(Continued from page seven)

the mid-west and have never lost my interest in good motors or cars. At one time I was fortunate enough to own an Alfa-Romeo and I am still planning on a sports car when I return to the States.

Sgt. F. W. Carlson
APO 301, c/o Postmaster
San Francisco, Calif.

—And we all hope that's very soon.—Editor

MECHANIC FOR HIRE

Gentlemen:

In the February issue of MOTOR TREND in "Classic Comments" you asked for mechanics experienced and able to work on classic cars. I would like to tell you a little about myself. Maybe you will find I am qualified for such work.

From 1927 until the beginning of the war (1941) I headed an auto repair shop in Belgrade, Yugoslavia. During this time my cousin and I were General Agents for Yugoslavia (dealers) for Nash, and as usual in Europe we had used car business and a repair shop also. That was not a maintenance shop only, but a modern repair shop able for general repair and overhauling. I was head of this shop. Since Yugoslavia has not own auto industry there were cars of all makes, mostly European. During this 14 years most of jobs done in our shop were on European cars. (Please don't think that it was a big enterprise and that I was a director.) Usually, we had four to eight mechanics, sometime a few more and I was not a supervisor only, since I am an auto enthusiast and motor is my hobby.

During this pretty long time through my hands passed a lot of different cars, among them such famous ones as: Minerva, Fiat 519, Lancia Lambda, Dilambda and Tri kappa, Austro Daimler, Avion Voisin, Hotchkiss, Delage, Mercedes 540-K and 320, Maybach SW38, etc. I had experience with Bugattis, too. For Avala road race 1928 came famous French driver, P. Genot (if spelling is good) with a 1.5 lt. Bugatti and he won, of course. Later this car was bought by a friend of mine, S. Marinkovich. For this friend I overhauled twice the little blue Bug. (Four years later Marinkovich was killed in an accident by training with the same car for the same race.)

The best Yugoslav racing driver and my close friend, Mr. Boshko Milenkovich, drove a 2.3 lt. blown Bugatti. Many, many hours I spent with him working on and preparing Divina Machina for races. By 1939 Belgrade Grand Prix I was Mr. Milenkovich's chief of pit. (Apropos, before the war Mr. Milenkovich owned a La Salle, then a Mercedes Benz 540K, a 2 lt. blown Wanderer and Bugatti, now he is driving a trolley bus in Belgrad, that is revolution.)

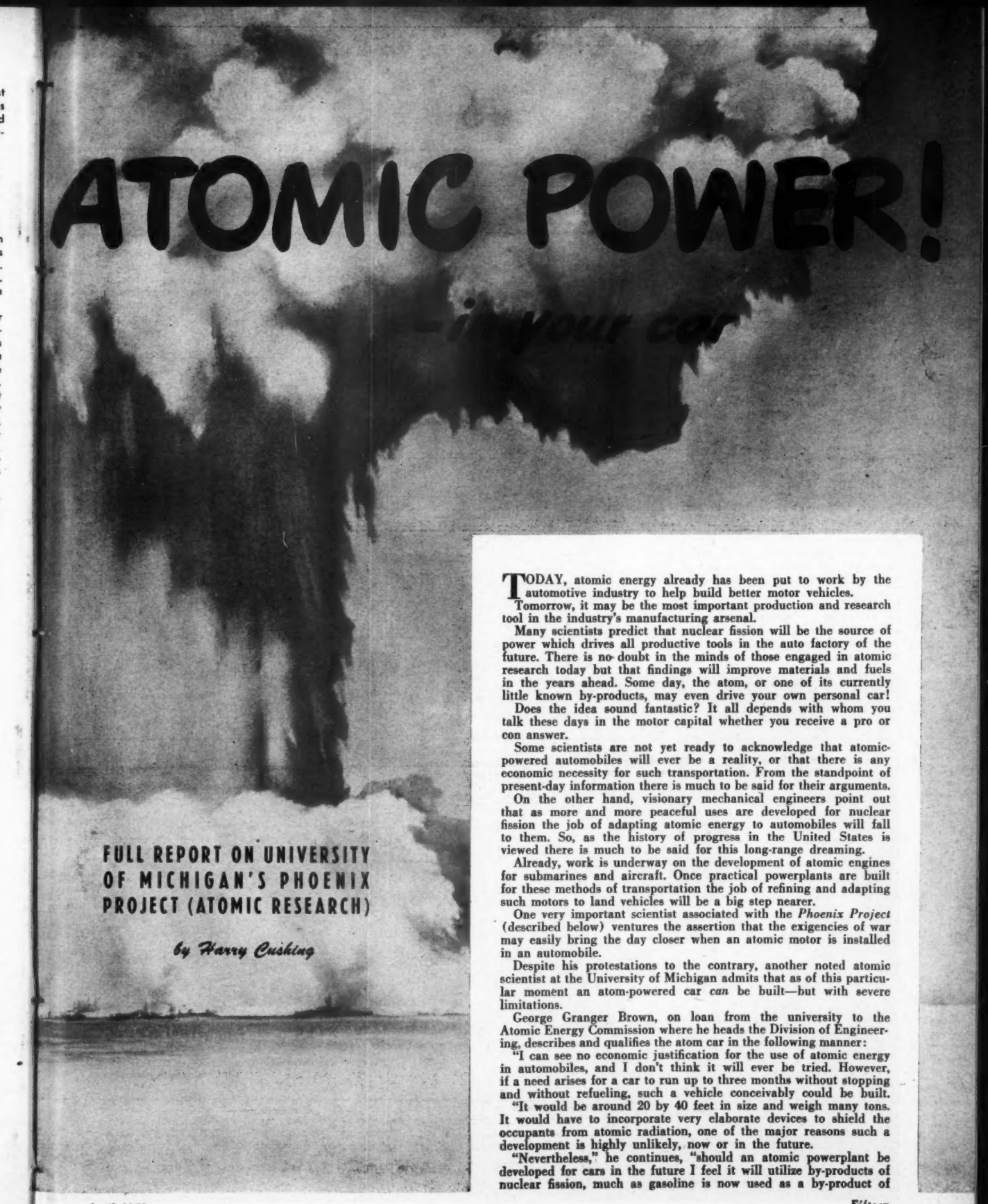
I was interested in motorcycles too and I owned a 500 T.T. Sunbeam. To accomplish my practical knowledge with theory I studied from 1925 to 1929 mechanical engineering and from 1929 to 1934 chemical engineering at Technical Faculty of University of Belgrade. Besides poor English I speak French and some German, and of course, Serbian. Next March I will be 43.

Unfortunately, I am 10 years out of my favorite job and sport. Now I am a displaced person in Detroit. I work for Chrysler on motor production. I am in U.S. since May, 1947.

If you think I might be qualified as a mechanic or as anything else I would be more than glad to go back in auto field and especially to come in South California, since there is the heart of American automobilism, not in Detroit.

Milan Novakovich
Detroit, Mich.

—An interesting career, to say the least. We're glad to pass the above information in the hopes you'll get back into your "favorite job and sport" soon.—Editor



ATOMIC POWER!

—in your car

FULL REPORT ON UNIVERSITY OF MICHIGAN'S PHOENIX PROJECT (ATOMIC RESEARCH)

by Harry Cushing

TODAY, atomic energy already has been put to work by the automotive industry to help build better motor vehicles. Tomorrow, it may be the most important production and research tool in the industry's manufacturing arsenal.

Many scientists predict that nuclear fission will be the source of power which drives all productive tools in the auto factory of the future. There is no doubt in the minds of those engaged in atomic research today but that findings will improve materials and fuels in the years ahead. Some day, the atom, or one of its currently little known by-products, may even drive your own personal car!

Does the idea sound fantastic? It all depends with whom you talk these days in the motor capital whether you receive a pro or con answer.

Some scientists are not yet ready to acknowledge that atomic-powered automobiles will ever be a reality, or that there is any economic necessity for such transportation. From the standpoint of present-day information there is much to be said for their arguments.

On the other hand, visionary mechanical engineers point out that as more and more peaceful uses are developed for nuclear fission the job of adapting atomic energy to automobiles will fall to them. So, as the history of progress in the United States is viewed there is much to be said for this long-range dreaming.

Already, work is underway on the development of atomic engines for submarines and aircraft. Once practical powerplants are built for these methods of transportation the job of refining and adapting such motors to land vehicles will be a big step nearer.

One very important scientist associated with the *Phoenix Project* (described below) ventures the assertion that the exigencies of war may easily bring the day closer when an atomic motor is installed in an automobile.

Despite his protestations to the contrary, another noted atomic scientist at the University of Michigan admits that as of this particular moment an atom-powered car *can* be built—but with severe limitations.

George Granger Brown, on loan from the university to the Atomic Energy Commission where he heads the Division of Engineering, describes and qualifies the atom car in the following manner:

"I can see no economic justification for the use of atomic energy in automobiles, and I don't think it will ever be tried. However, if a need arises for a car to run up to three months without stopping and without refueling, such a vehicle conceivably could be built.

"It would be around 20 by 40 feet in size and weigh many tons. It would have to incorporate very elaborate devices to shield the occupants from atomic radiation, one of the major reasons such a development is highly unlikely, now or in the future.

"Nevertheless," he continues, "should an atomic powerplant be developed for cars in the future I feel it will utilize by-products of nuclear fission, much as gasoline is now used as a by-product of

ENGINEERS at Ford using isotopes (above) to photograph for hidden defects. Gamma rays from inside pass through critical section under inspection and produce photograph of structure on film strapped to outside of casting

DRAMATIC moment in Ford experimental foundry (below) as gas sample is taken, following addition of isotopes to molten steel. Metal was made radioactive in effort to trace activities of elements during steel production process

petroleum. These atomic by-products are currently being dumped in the Columbia River as waste.

"Personally, I don't think atomic energy will have much effect on the automotive industry as motive power," he concludes. "I do believe, however, it will be very important as power for production of cars and trucks, and as a tool in development and research work."

At the other extreme is the professor of mechanical engineering at the University of Michigan who is currently telling his automotive students that within their lifetimes there *will be* atomic energy to contend with as a motive force for personal transportation. The professor, who asks to remain nameless, is a respected member of his profession, and has been teaching automotive engineering for 25 years. He is also a member in good standing of the Society of Automotive Engineers.

He believes that some day atomic cars will be commonplace. In fact the illustration on the cover of this issue of MOTOR TREND is based upon his vision of such vehicles. To him, the fact that horses and buggies gave way to gasoline-powered cars and trucks during his lifetime is proof enough that atomic cars are in America's future.

"After all," he says, "the moment you tell Americans something can't be done, along comes a guy who does it."

The professor dreams of the day when each automobile customer will receive a "bound

AL CRUNDALL

NOTED atomic scientist admits that atomic car could be built today, although "it would be around 20 by 40 ft. in size and weigh many tons. It would have to incorporate very elaborate devices to shield the occupants from atomic radiation . . ." The car could look like this

box of fissionable stuff together with pills that will create enough energy to last the life of the car."

Ideally, he says, an atomic powerplant will be some form of an electric motor since nuclear fission is essentially an electrical action. This will permit energy to be changed directly into power with a minimum loss of effectiveness.

There is no reason to believe, the professor goes on, that an entirely new method of shielding will not be developed to protect car passengers from atomic radiation. For example, he wonders why an electric field couldn't be installed around a car's atomic pile to counteract radiation, thereby replacing heavy lead shielding. This would bring the size and weight of an atomic car down to usable highway size.

He believes that the day is not-too-far distant when automotive engineers will be asked to take the theories and developments of the physicists and translate them to practical uses in motor vehicles.

"It may be 25 years before a workable atomic car is ready for the public," the professor concludes, "but I'm convinced that if the auto industry sees its feasibility it will be just a matter of time before they have atom cars ready for everyday driving.

"I only wish I were going to be here to see it!"

The advent of such an atomic-powered vehicle will come about as the logical answer to a genuine public need. Its development will be an evolutionary process, much as present-day cars have evolved from the horseless carriages of 1900. Right now, though, automobile companies are concentrating their use of atomic energy upon practical industrial applications of radioactive isotopes. In addition, they are making monetary grants to recognized organizations which carry on research into peaceful applications of the mighty atom.

One institution benefiting from this interest in atomic energy is the University of Michigan. Hundreds of thousands of dollars have been advanced by various car firms in recent months to the school's far-reaching *Phoenix Project* for specific long-term automotive-atomic investigations.

At present, the industry's use of radio-active isotopes is helping to solve many knotty scientific problems. The results of numerous tests and experiments are beginning to revolutionize knowledge of metallurgy, chemistry and many other processes peculiar to the automotive world. These isotopes, which come from the atomic pile at Oak Ridge, Tennessee, have been used and studied by automobile engineers for nearly three years.

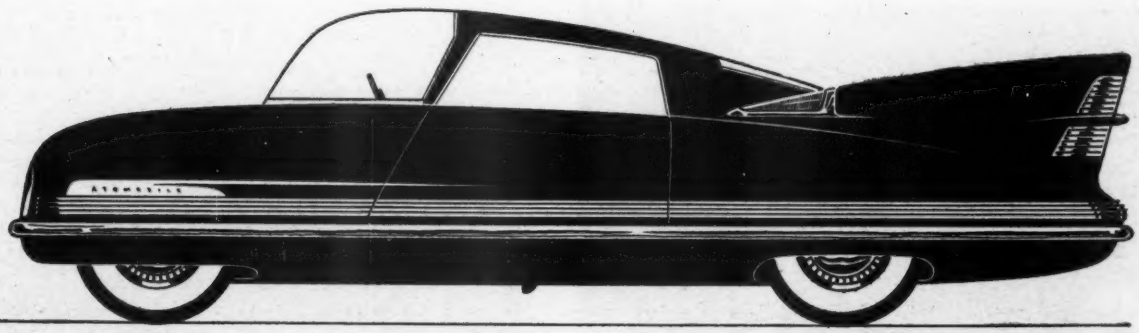
Called the most scientific research tool since invention of the microscope, radio-active isotopes emit energy rays which penetrate solid matter or liquid with equal ease. They give off radiation which may be measured by Geiger counters as accurately as charting the ticks of a watch.

Probably the first to work with isotopes in the industry is the Ford Motor Company, which has been carrying on research aimed at improving metallurgy, building higher quality into cars, and increasing efficiency of manufacturing through process control. Ford has established a completely-equipped industrial laboratory for the work with radioactive materials. It is built underground, is heavily shielded with lead to protect personnel from radiation sickness, and in every respect resembles an atomic energy plant.

(*Continued on page forty-eight*)

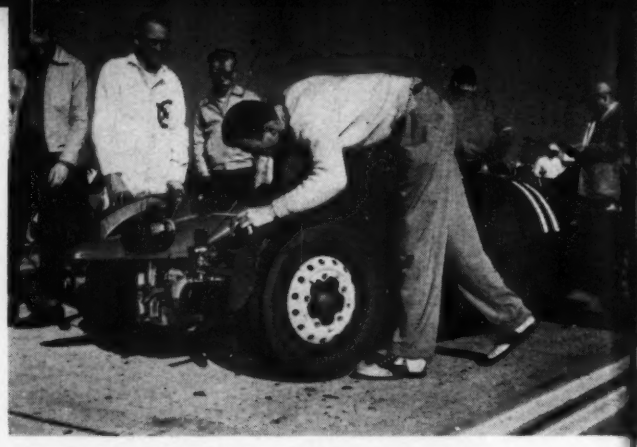
ATOMIC CAR of future, based on vision of professor of mechanical engineering at Univ. of Michigan. This professor dreams of the day when an automobile customer will receive a "bound box of fissionable stuff together with pills that will create enough energy to last the life of the car"

AL CRUNDALL



JOE .ASHIRO

LINED up for the start, cars were parked at an angle to the course, dug out in a wide left-hand arc. Drivers sprinted across track to cars



KURT HILDEBRAND brought his trim Volkswagen-based sports car from Chicago, entered late, failed to finish due to troubles on trip south

MINIATURE LE MANS

CROSLEY HOT SHOT WINS SEBRING ENDURANCE RUN AGAINST TOP EUROPEAN COMPETITION

by Griffith Borgeson

PHOTOGRAPHS BY JACK CANSLER

AGAINST a field of 27 European machines, most of them costly high-performance jobs, a single American entry—a humble, fighting Hot Shot—won the Sebring, Florida, Six-hour Road Race held by the SCCA last December 31.

Only with handicapping can a four-cyl. Crosley come in ahead of a 12-cyl. Ferrari, or 44 cu. ins. outperform the 331 cu. ins. of a Cad-Allard. The Sebring six-hour enduro, run over a twisting 3½-mile paved circuit in daylight and in darkness with full road equipment, used complete Le Mans regulations, including the fair-to-all categories handicapping formula worked out by France's Automobile Club de l'Ouest, organizers of the classic *Le Mans Grand Prix d'Endurance.*

The 28 entries hailed from all parts of the U.S., and even from Canada. There were five MG's, four Cad-Allards and Morris Minors, three Ferraris, Jag XK120s, and Aston-Martins, a Volkswagen, a Fiat 1100, a Simca, a Cad-Healey, and—a last-minute arrival—the Crosley, driven by Fritz Koster and Ralph Deshon.

In spite of Sebring's somewhat out-of-the-way location, 8000 spectators were there when, at 3 P.M., the whistle blew and the drivers sprinted across the track to their mounts, fired up, and blasted off on the six-hour grind. The race was long and high speeds were reached on both of the mile-long straightaways, but there were no accidents and all but five cars finished the event. That the race fulfilled all hopes is proved by plans already afoot to extend it to 12 hours in 1951, 24 hours in '52.

First five places in the handicap were:

Crosley—89 laps; Ferrari 166, James Kimberly and Marshall Lewis—108 laps; Fiat 1100, Robert Keller and Richard Haynes—95 laps; Ferrari 166, William Spear and George Roberts—106 laps; and MG TC, John VanDriel: 95 laps.

Class winners were:

Class B: Cad-Allard, Fred Wacker and Frank Burrell: 111 laps.
Class C: Jag XK-120, John Fitch and C. Whitmore: 98 laps.
Class D: Ferrari Mille Miglia, Luigi Chinetti and A. Momo: 104 laps.
Class E: Ferrari 166, James Kimberly and Marshall Lewis: 108 laps.
Class F: MG TC, John VanDriel: 95 laps.
Class G: Fiat 1100, Keller and Haynes: 95 laps.
Class H: Crosley, Koster and Deshon: 89 laps.

A TIGHT group of four cars flows through the chicanes on the circuit's sharpest turn (right)

FLORIDA'S Governor Fuller Warren honored the Sebring meet with his enthusiastic presence. Huntoon took state's leader on circuit tour

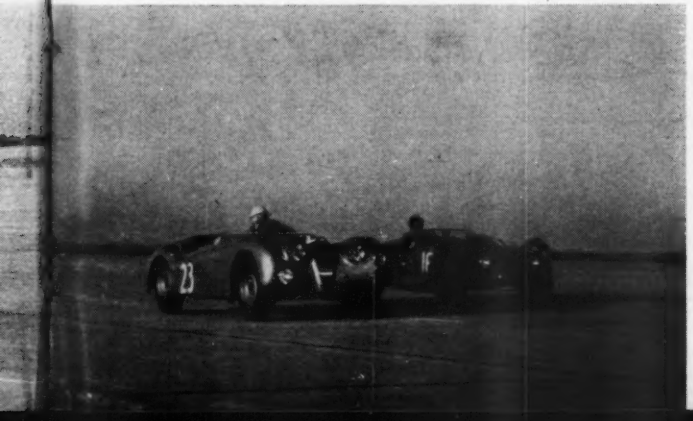
LUIGI CHINETTI, two-time winner at Le Mans and Ferrari works driver, won in Class D with 104 laps. Ferrari is only 12-cyl. car made today

KIMBERLY'S Ferrari 166 hugs a hairpin, followed by Brocken's Morris. Only in a well-handicapped race can such cars compete on even terms

ACTION at night: Kimberly's Ferrari presses George Rand's Aston Martin, finished with 108 laps against Rand's 97, winning Class E

110 MPH down straightaway (below), Fitch's Jag, Walters' Cad-Healey struggle neck and neck. Fitch won Class C, completed 98 laps

RACE organizer George Huntoon congratulates the victors (below), Crosley pilots Deshon and Koster. Car is owned by Vic Sharpe of Tampa



MOTOR TRIALS

PREPARATIONS for testing the '51 Mercury being made by Don Francisco, Technical Editor (attaching fifth wheel), and Editor Woron (checking installation of fuel consumption meter). With trunk lid up spaciousness of compartment is apparent. New rear fenders lengthen lines of '51 Mercury

by Walter A. Woron

PHOTOGRAPHS BY THOMAS J. MEDLEY

APPROXIMATELY a year ago, MOTOR TREND Research tested the 1950 Mercury. At that time, we offered some suggestions for improvement of the car and are happy to report, now that the test of the 1951 Mercury is history, that some of these improvements have been incorporated on the new car.

Basically, aside from exterior styling changes, the 1951 Mercury is the same car as last year's model. However, one of the recommended changes ". . . a wider rear window would improve vision to the right rear . . ." has been included. Stylewise, the car has a new grille and front end trim, new rear fenders and quarter panels, and new bumpers.

In the engine compartment, the big news is the "Merc-O-Matic," which combines a torque converter and three-speed transmission. Since this converter is similar to the Fordomatic (tested by MOTOR TREND Research, Jan. '51), we decided to trial the Mercury with standard transmission, plus overdrive.

After preparatory arrangements had been made through the Los Angeles office of the Lincoln-Mercury Division, we drove out of the showroom of Deaton Motors (8955 W. Olympic Blvd., Beverly Hills, Calif.) in a gray, four-door sedan. The odometer indicated 1427 miles, and we had watched the agency mechanics tune the engine (carburetion and timing), adjust the clutch, and give it a lube job. We were assured the car was in good operating condition and was ready for our rigorous two-day test.

INTERIOR appointments, including upholstery, are quite good. However, the instrument panel is set up in manner making it difficult to read all instruments at a glance, taking two or three glances from the road to read the speedometer, oil pressure gauge and water temp. gauge

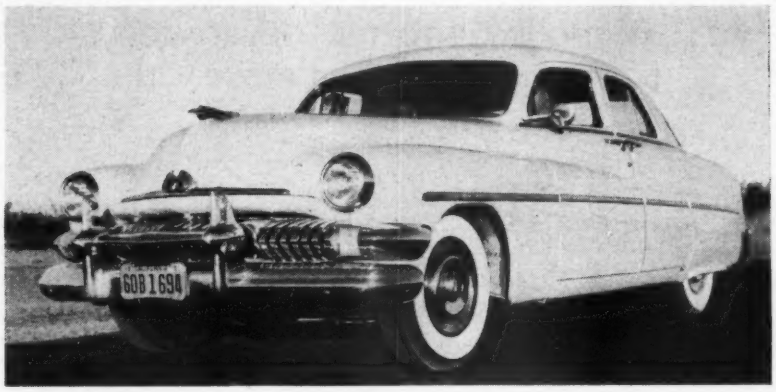
Test Data

FUEL CONSUMPTION: After the 1950 Mercury won the 1950 Mobilgas Economy Run with the phenomenal mileage of 26.52 mpg, every Mercury owner immediately asked, "Where has this hidden talent been hiding? I don't get that kind of mileage with *my* car." And then Mercury dealers were deluged with requests for information on how to improve their mileage.

Naturally, everyone cannot expect to get this mileage and frankly, in none of the tests conducted by MOTOR TREND Research, did we get 26.5 mpg. We did approach it, however, with 25.80 mpg at a steady 30 mph, while the poorest mileage was through heavy traffic—8.38 mpg. (See Table of Performance for other figures.) However, the 1950 Mercury that competed in the Mobilgas Economy Run was set up perfectly—all engine components were prepared for maximum performance with the utmost care.

Driver technique and maintenance also enter into fuel economy, things such as: (1) maintaining proper tire pressure, (2) use of correct viscosity oil in engine and transmission, (3) proper carburetor settings, (4) au-

1951 MERCURY IMPROVED OVER LAST YEAR'S MODEL



STYLING changes in the '51 Mercury are: new grille and front end trim, new rear fenders and quarter panels, bumpers, wider rear window

TABLE OF PERFORMANCE

DYNAMOMETER TEST

1200 rpm (full load) 20 mph	28.5 road hp
2000 rpm (full load) 32.5 mph	51 road hp
3550 rpm (full load) 58.5 mph	(Max.) 76 road hp

ACCELERATION TRIALS (SECONDS)

Standing start ¼-mile	:21.74
0-30 mph (low only)	:05.94
0-60 mph through gears	:19.21
10-60 mph in high	:22.92
30-60 mph in high	:14.44

TOP SPEED (MPH)

Fastest one-way run	92.49
Average of four runs	91.18

FUEL CONSUMPTION (MPG)

	Conv.	O.D.
At a steady 30 mph	18.08	25.80
At a steady 45 mph	16.05	19.75
At a steady 60 mph	14.90	17.09
Through light traffic	16.96	18.75
Through medium traffic	13.37	15.50
Through heavy traffic	8.38	13.38

BRAKE CHECK

Stopping distance at 30 mph	33'10"
Stopping distance at 45 mph	114' 8"
Stopping distance at 60 mph	199' 6"

SPEEDOMETER CHECK

At actual 30 mph indicated 30.5 mph	1.7% error
At actual 45 mph indicated 48 mph	6.6% error
At actual 60 mph indicated 64.5 mph	7.5% error

tomatic choke at proper setting, (5) correct spark plug gap and ignition timing, and (6) absolute minimum use of low gears and brakes, plus avoidance of high speeds.

TOP SPEED: Stability at high speeds is a desirable feature and one which the '51 Mercury has. A bouncing, weaving car at high speeds is a dangerous car, but we had no qualms about the Mercury at any time.

The average top speed of the overdrive-equipped Mercury was 91.18 mph, while its fastest one-way time was a good 92.49 mph. At this latter speed, the speedometer was indicating 101 mph. Out of curiosity we checked the top speed in conventional third gear and found it to be an average of 5.15 mph slower.

BRAKING: Perhaps the most often overlooked and disregarded item in buying a car is the braking system. For our readers we give three conditions: stopping distances at 30, 45 and 60 mph. These distances are the actual brake-applied stopping distances (that is, the distance it takes to stop from the instant the foot hits the pedal until the car has stopped). In all cases, full braking power is used and unless the car begins to slide dangerously, the foot does not leave the pedal.

Stopping distances for the '51 Mercury were found to be slightly better than those for the '50 Mercury, and compare favorably with stopping distances for other cars.

BEHIND THE WHEEL: Sitting position and wheel location of the Mercury are both satisfactory; legroom, headroom and control accessibility are all good, except that more footroom under the front seat for rear seat passengers would be advantageous. Visibility is good in all directions and since the rear window has been widened, the former blind spot has been eliminated.

RIDE AND STEERING: Immediately noticeable when first driving the Mercury with low-pressure tires was the tire rumble. These tires, in combination with comparatively slow steering, also make for mushiness into turns at moderate to high speeds. The greater proportion of weight is on the front wheels, which adds to this condition. Over mountainous, twisty roads, the low-pressure tires squealed quite noticeably, and the steering felt spongy. It is felt that this could be improved by using a quicker steering ratio and altered weight distribution.

The ride in the Mercury is as comfortable as most cars; however, an odd condition was noted in traveling over dips or bumps in the road. This was a "floating" fore and aft of the body and frame over the axles. We could not actually account for this condition, but since it was felt by all of us and Mercury owners whom we have talked with since, we are certain the situation exists. (Incidentally, we would be interested in hearing from other Mercury owners about this.)

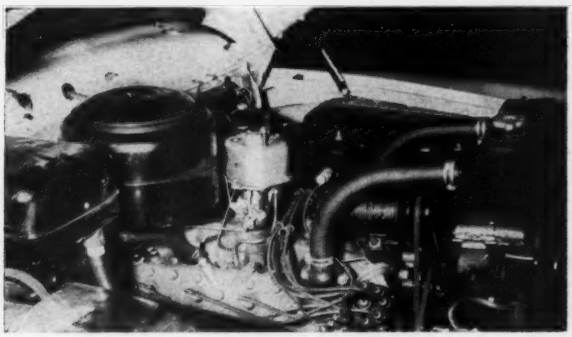
ACCELERATION: The figures on acceleration given in the Table of Performance speak for themselves. Normal shifts were necessary since the shifting rod is of a small diameter and can be easily bent during a quick speed-shift, such as used for maximum acceleration.

Trend Trials Number

The Mercury, which falls in the $1701-1950 price bracket, has been given a Trend Trials No. of 36.3. This number, as with previous model cars which we have tested, has been arrived at through totaling the cost per bhp (which tells you how much it costs for the power of the automobile), the fuel cost per year (based on the overall fuel consumption average obtained on the road test), the nor-

(Continued on page forty-nine)

ACCELERATING on a sandy stretch, car had more power than traction, digging holes before it took off. During normal acceleration tests on asphalt, the Mercury ran cool at all times, although air temperature was 80° F. Acceleration figures can be found in Table of Performance



CHANGES under hood are minor, with accessibility of components being as good as ever. The quiet running engine has been increased by 2 hp through a more accurately balanced crankshaft, selective fit of all main bearings, longer intake lobe ramps and triple ramp exhaust lobes

THE END OF A STRANGLEHOLD?

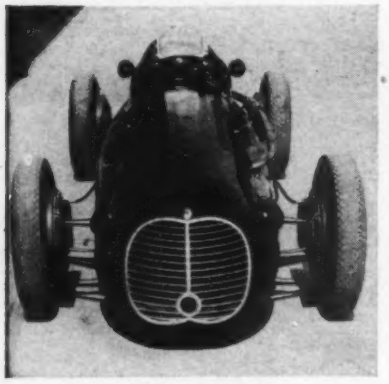
AN INQUIRY INTO THE ALFA-ROMEO'S DOMINATION OF GRAND PRIX RACING

by Roger Huntington

ALFA-ROMEO'S five-year stranglehold on European Grand Prix racing may be nearing an end! That's the big news out of the 1950 Formula "A" road racing season.

Ever since this amazing little Type 158 Alfa took off in its first post-war race at St. Cloud in 1946, it has had things all its own way. It has competed in 21 major Grand Prix races in the five years since that time—and won exactly 21! In most cases, the three-car factory team has been able to fill the first three places without pushing. In fact, this astonishing car has consistently been at least four per cent faster in lap speed than any of its competitors!

That is, up until that memorable afternoon of September 3rd, last season, at the Italian G.P. over the 3.9-mile Monza Autodrome course at Milan. This occasion marked the first public appearance of a terrific new 4½-litre (274 cu. in.) unsupercharged Ferrari—and that's when the Alfa's trouble started.



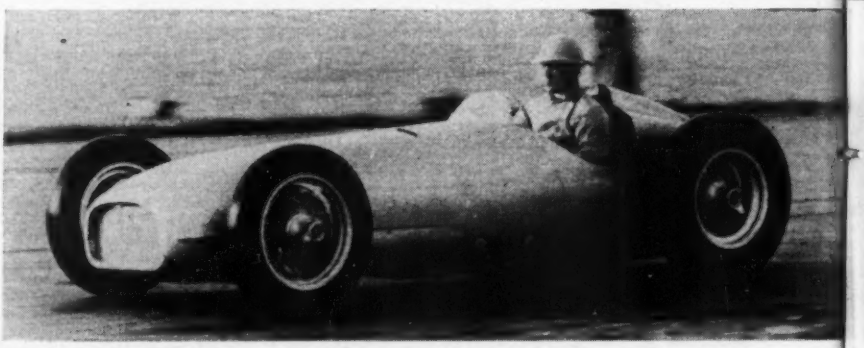
NO LONGER a contender is the Maserati 4CLT (above), although moderately successful prewar

A red-hot qualifying duel followed. When the dust cleared, Fangio's Alfa sat on the pole by a scant 1/5th second over Ascari's Ferrari, their comparative lap speeds being 118.7 and 118.6 mph. In the race, the Ferraris ran three of the factory Alfas into the pits and chased Farina's Alfa home in second spot, running only 68.6 seconds behind in a 313-mile race! The Alfa 158 has still to be beaten in post-war Grand Prix racing—but 1951 may be another story.

Let's look at 1950 more closely. As you know, European G.P. racing is run in three "classes": Formula A is the big "championship" class for supercharged cars up to 1½ litres (91.5 cu. in.) displacement and 4½ litres (274 cu. in.) unblown; there are no chassis, fuel, weight, etc., limits. Formulas B and C are for the "light cars," two litres (122 cu. in.) and 500 cc (30½ cu. in.) unblown respectively; we won't discuss these classes in this article.

So we find that the Formula A rules limit only piston displacement (plus a few safety requirements like rear view mirrors, etc.), leaving the designers a very wide latitude in which to exercise their art. The results to date have been nothing short of amazing. The newest 1½-litre (91 cu. in.) Alfas are only one to three per cent slower on lap time than the fastest of the fabulous prewar three- to six-litre German Mercedes and Auto-Union cars, which developed anywhere from 450 to 650 hp! Getting that kind of speed from 91 cu. ins. is saying plenty for the engineering skill behind the Alfas.

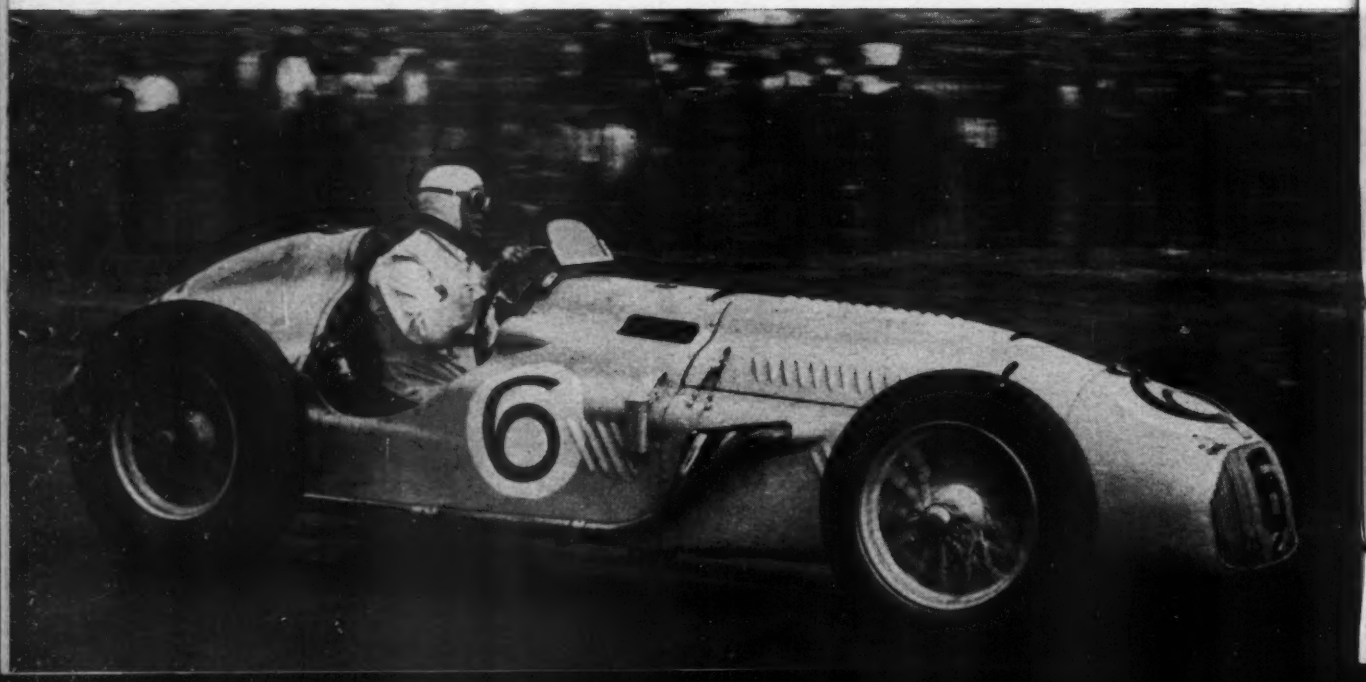
Looking over the actual 1950 race results, we find the 158 Alfas, in the hands of those



WITH POWER to spare, the BRM (below) still hasn't put up a good showing in G.P. events

A CAR that's done fairly well in post-war racing —the Talbot-Lago 4½-litre (below). At the wheel is Louis Chiron, one of the great French drivers

MAURICE LOUIS ROSENTHAL



THE CHAMP . . . the car that hasn't been beaten in post-war Grand Prix racing—Alfa-Romeo 158. Seen here is driver Guiseppe Farina at Monza

two throttle artists, Juan Fangio and Giuseppe Farina, victorious in every race they entered. Out of the 14 major Formula A races during this last season, Alfa-Romeo entered 10 and won all of them, the other four going to Talbot (2), Maserati, and 4½-litre Ferrari. The 1½-litre Ferrari and the much-ballyhooed BRM did not win any races.

Now, let's look at this year's competing cars. We might mention that, just as Indianapolis in this country, European G.P. racing is no game for the amateur. It takes a lot of engineering, money, and driving skill to stay with that crowd. As a result, there are few private entries; the bulk of the competition is among factory-sponsored "teams" of three or more cars each, driven by highly-paid professional drivers (as a rule, partially financed by government funds).

Last season, there were six basic factory models in competition. Below is a thumbnail sketch of each.

Alfa-Romeo 158-A

This car was actually designed in 1938 to compete in the International 1½-litre "Voiturette" (light car) class. It was unbeatable then except in its one brush with the W-165 Mercedes at Tripoli in 1939. Since the war only minor changes have been made on the car, including cleaner bodywork and the adoption of two-stage supercharging (that is, the mixture is compressed successively through two blowers, which allows higher boost pressures without excessive heating and blower power loss).

The engine is a double-ohc straight-eight, 2.27 x 2.79 in. bore and stroke, with plain bearings throughout. With the present two-stage layout, the boost pressure is 25 lbs. and the rated output is 310 hp at 7500 rpm on alcohol; it can be turned up to 8400 rpm if necessary.

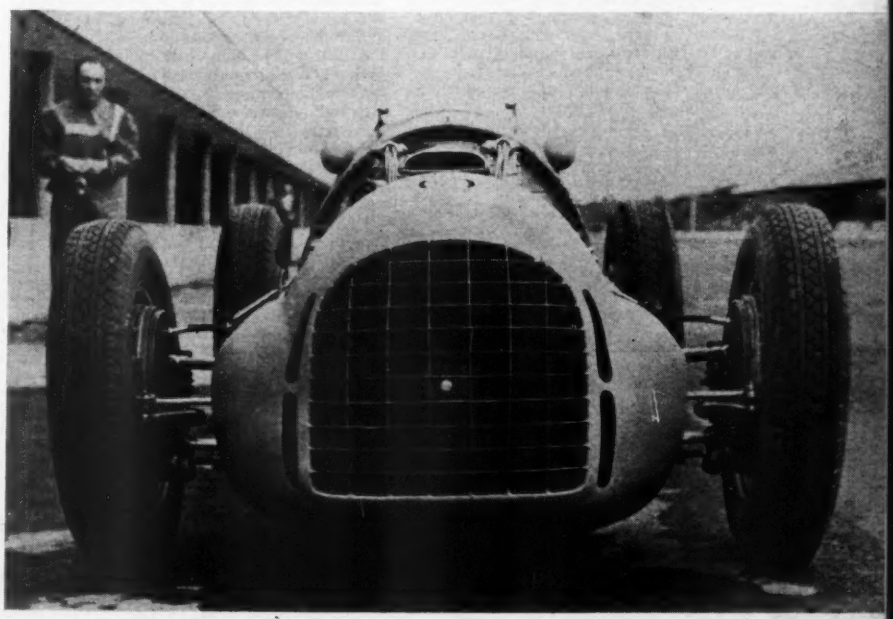
Suspension is independent all around for maximum road-holding and to eliminate lateral torque reaction on the rear axle. Front suspension is through trailing links (as on the old Auto-Union) with "swing axle" layout at the rear—axles pivoted at differential case and hung from a transverse leaf spring. This type of suspension was discarded by both Auto-Union and Mercedes-Benz in the late '30s, but the Alfa certainly seems to thrive on it!

The total empty weight is about 1650 lbs. Acceleration and top speed are obviously terrific as lap times show; last season, this model was clocked over a short straightaway on the Spa circuit at 183.5 mph, and at 195.0 on a slight downgrade at Pescara!

Maserati 4CLT/48 "San Remo" Model

Here is another basic design that was laid down in the '30s for the Voiturette class. It's been a moderately successful car throughout its life, but since the war, it has definitely been the slowest of the blown "A" jobs. The engine is a twin ohc, four-cyl., 78 x 78 mm (3.07 x 3.07 in.) bore and stroke, with four valves per cylinder and plain bearings. Two-stage supercharging is employed, the two Roots blowers mounted one above the other at the front of the engine pumping 24 lbs. boost; maximum output is claimed to be 290 hp at

(*Continued on page forty-two*)



ALTHOUGH the Ferrari 125-C has won five races since 1948, it has given Alfa little competition

LOW, RACY, combining both Nash and Healey characteristics, new sports car stands only 38 ins. above road. Notable specs: curb wt. 2600 lbs., wheelbase 102 ins., overall length 170 ins.

Nash Announces . . .

A NEW AMERICAN SPORTS CAR!

NASH, America's boldest automotive innovator, chalks up another "first" to its credit with the announcement to the American public of the first home-bred high-performance sports car in decades. "Home-bred" must be qualified by pointing out that Nash has pooled its experience with Healey, the famous English sports car builders, calls the 125 mph beauty the Nash Healey. It seems appropriate that, in view of our industry's long-standing lack of know-how in sports car construction, an overseas specialist firm was chosen to collaborate on this project.

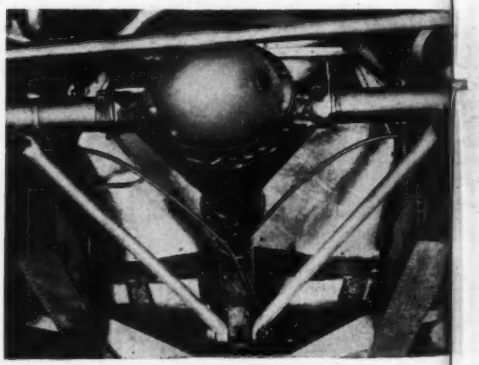
The new car was introduced to the American public in late February at the Chicago Automobile Show and is undergoing exhaustive engineering tests at Daytona, Bonneville, and Indianapolis. Production and sales during 1951 will be cautiously limited while the U.S. market for sports cars is studied. Prices, "substantially higher" than other Nash models, will be announced soon.

Actually, the Nash Healey took its first bow before the automotive world at last winter's Paris Salon, where it created a major sensation. MOTOR TREND, operating in close accord with the Nash factory, has withheld all but casual references to the car pending its Chicago debut. But you may be sure that this new arrival on the home scene will be analyzed carefully in coming issues.

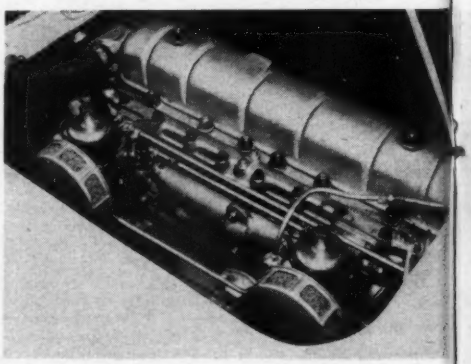
An examination of the material at hand shows Nash Healey to be a highly interesting car from grille to tail lights. Frame, suspension, body and engine all possess novel features that will provide much food for future discussion. One of the most intriguing of these features is the specially-designed aluminum head with cast-in, two-port intake manifold, which adds so greatly to the efficiency of the basic Nash engine.

The well-built Nash Healey's performance potential can be inferred from these very suggestive figures: its engine packs a 125 bhp wallop, power-weight ratio is 1:20.8, rear end ratio with overdrive is 2.48:1. Frame is rigid, suspension is solid but smooth, lines are dashing and fine. America has a sports car!

SPORTS CAR seats two comfortably (53 in. width). Front suspension, Healey trailing link, coil springs; rear, coil springs and track bar. Trans. is 3-speed with O.D., final ratio 2.48



NASH HEALEY sports car frame is of massive, welded box-section construction. Note radius rods, anti-sway bar, and flanged differential



POWERPLANT is ohv, 234.8 cu. in., 6-cyl. engine delivering 125 hp @ 4000 rpm. Two S.U. carbs used with large intake manifold. C.R., 8.1:1

SPORTS TRIAL . . .

SMALL DISPLACEMENT SINGER NINE ROADSTER GIVES GOOD PERFORMANCE

by G. Thatcher Darwin

PHOTOGRAPHS BY FELIX ZELENKA AND E. RICKMAN

HARSH cornering revealed very little tendency of car to heel over. Note ruggedness of test area

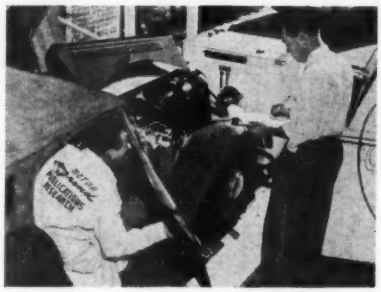
ALTHOUGH produced by one of Britain's oldest motor manufacturers, the Singer "Nine" is a relative newcomer to the ever-increasing group of imported models available to the American buyer. It is interesting to note that although the company has a rich store of experience in the manufacture of sports cars, this latest example bears the more conservative designation "light roadster." Such an honest appraisal of the car makes its virtues all the more evident, and indeed, I was to learn that many of the Singer's features are of distinct sports car calibre.

Vaughan-Singer Motors, located in Hollywood, California, are the Western Factory Distributors and I called on Mr. Monroe Gretske, their Sales Manager, for a check-out and some preliminary information before starting on the Sports Trial. He explained that the Singer engine is of the well-tried, four-cyl. ohc design and has a displacement of 1074 cc (65.5 cu. in.). The engine has been very thoughtfully planned with an eye toward easy maintenance by the enthusiastic owner.

The cylinder head, for instance, has been kept free of accessories so it can be readily removed; the cam chain tension adjustor is conveniently positioned on the side of the block; and all wiring and electrical components are mounted in accessible locations.

Mr. Gretske also showed me the beautifully prepared owner's *Maintenance Manual*. In it every conceivable operation has been detailed in clear step-by-step sequence. This is a feature that others would do well to copy.

Out in the shop I got my first look at the test car. The Singer's appearance is rakish. The purposeful angle of the radiator, the long hood, the deep cut doors, and the very harmonious blending of rear deck and rear fender lines combine to form a pleasing silhouette. I was surprised to learn that the price, delivered in Los Angeles, was only $1,495. Here is a car well within the reach of the buyer of modest means. This actual car had covered a little over 5,000 miles as a demonstrator, surely among the hardest uses to which a machine can be put, and all comments following should be weighed with that in mind.



CLAYTON Chassis Dynamometer test. Engine lugged well at low speed and showed relatively high maximum output (22 road hp @ 3100 rpm)

Sliding in behind the wheel I first noticed the prominent double flared cowl, a very sporty touch, and the well-placed instruments. The speedometer is on the right with ammeter, fuel and oil pressure gauges in a group to the left. Control for the self-cancelling trafficators is above the horn button on the wheel. The bucket type front seats are individually adjustable and give firm support. The steering column is also adjustable for rake over a very wide range, but not for height.

I think the clutch and brake pedals are rather close together and the area of the pedal itself seems very small, by American standards. This is characteristic of many British cars however, and one becomes accustomed to it. Another point of criticism was that the foot dimmer switch seemed rather awkward to reach.

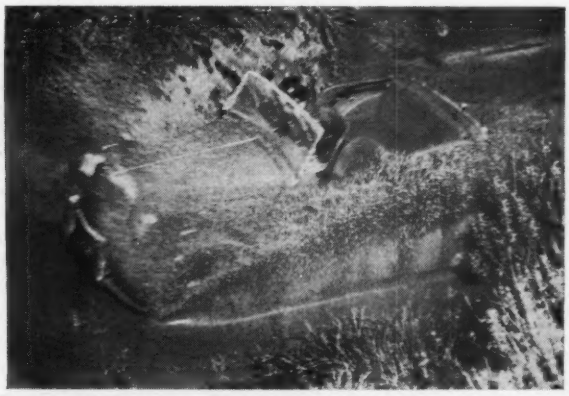
The bench type rear seat is placed a little higher than the front, and as is to be expected on a car of modest dimensions, legroom for two adults is somewhat restricted here.

One very good feature is the built-in roller in each door sill to compensate for the natural tendency of doors on open cars to sag.

Out on the street in traffic I developed a quick appreciation for the Singer's controllability. The steering is light and responsive. Even over rough surfaces, no trace of road shock is felt through the wheel. This positive steering, coupled with solid beam front axle and semi-elliptic leaf springs all-around, gives the car a steadiness which is definitely up to sporting standards. Only on very bumpy pavement does the characteristic tendency of leaf springs to pitch become noticeable, and the very favorable central position of the front seats offsets most of this effect.

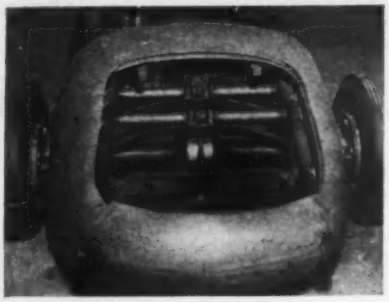
The Singer's transmission has four speeds with synchromesh on the three top ratios. The shift lever is centrally located on the floor and has a very pleasant positive feel. My first reaction was that the three upper ratios should be closer, but after more driv-

(*Continued on page thirty-five*)



KER-SPLAAASH! Singer took its dunking without missing a beat. Vymide upholstery can be wiped dry without damage or loss of luster

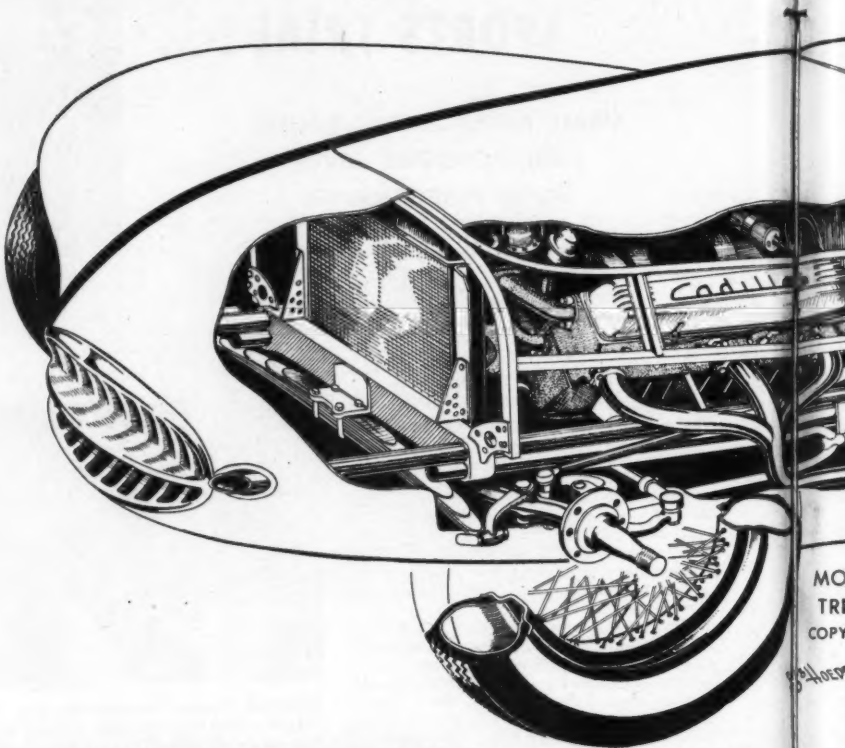
SINGER behaved well on dirt. Firm springing and low center of gravity permit power slides with confidence. G. T. Darwin is at the wheel



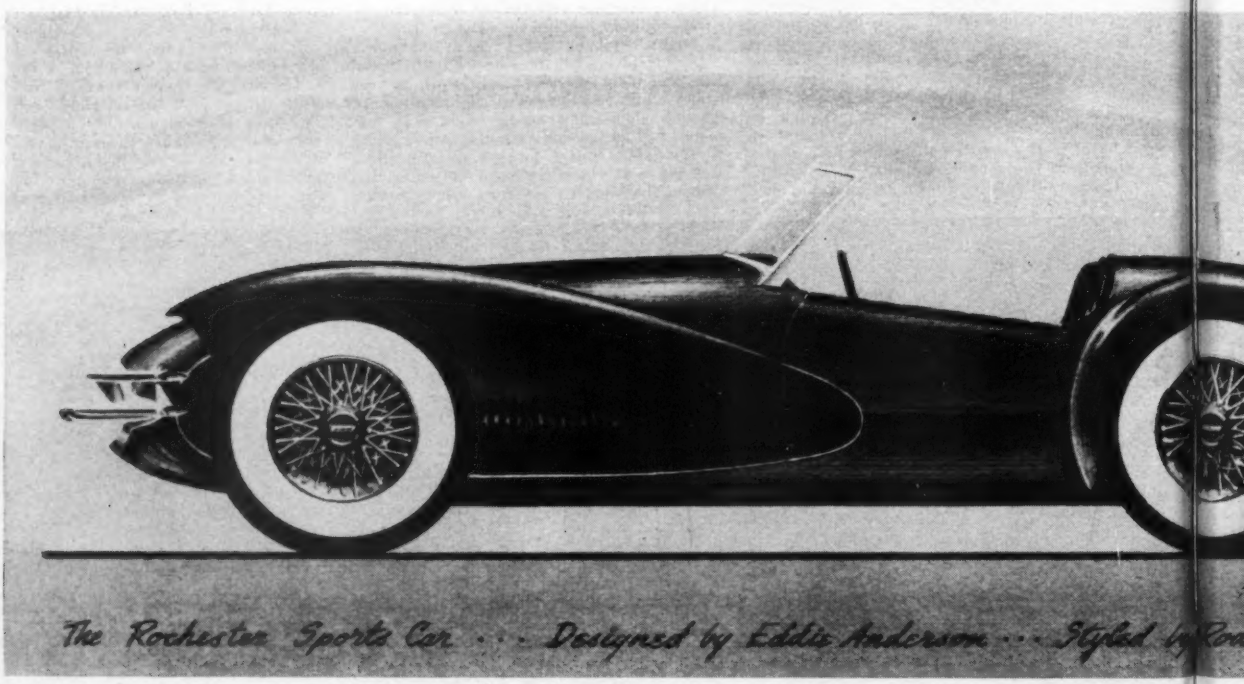
THIS SHOT, taken while the car was under construction, shows the double-leaf rear suspension arrangement and accessibility of Hillebrand quick-change rear end. Wheels are racing type Rudge-Whitworth 6.70x15s, brake drums are of magnesium, steel-lined, and Ford brake components are used. Tail lights are recessed in removable bumper, spare wheel under deck lid.

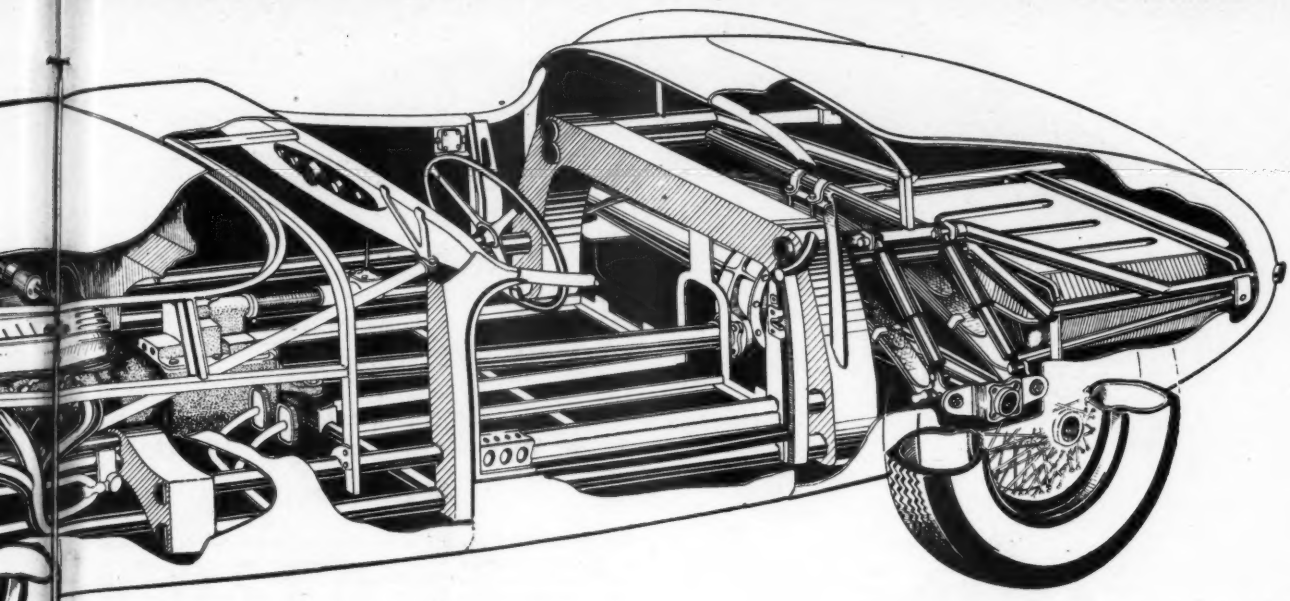
PHOTOGRAPHS BY E. RICKMAN

SEAT cushions, when in place, are level with top frame tube, driveshaft passes between cushions. Seat squabs pull forward, giving access to luggage space. Body was hammered out of aluminum sheet stock and entire car was engineered in the perfectly equipped Diedt plant, every detail worked out jointly by owner Anderson, chassis builder Diedt, and metal man Faw



MAJOR structural details are made strikingly clear in this cutaway. Frame is principally constructe of 3/32-in. wall x 2¼-in. dia. chrome-moly tubing. Functions of the unique offset le are t permit seating within the frame, low center of gravity, small frontal area, good (6½ i groun clearance. Highly-tuned Cad engine drives through conventional Ford box with Lincol ars ar Norden track racer steering is used. Suspension is by transverse leaf springs fore and two so springs being used at the rear for a gentle, firm ride, in place of the more obvious gle, sti unit. Solid front axle was adopted rather than i.f.s. simply because this type has proved itse most successful in dirt track racing. Rear axle radius rods anchor at the rear extremi of fram





MOTOR TREND COPYRIGHT

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From Benny's Maxwell To...

THE ROCHESTER CAR

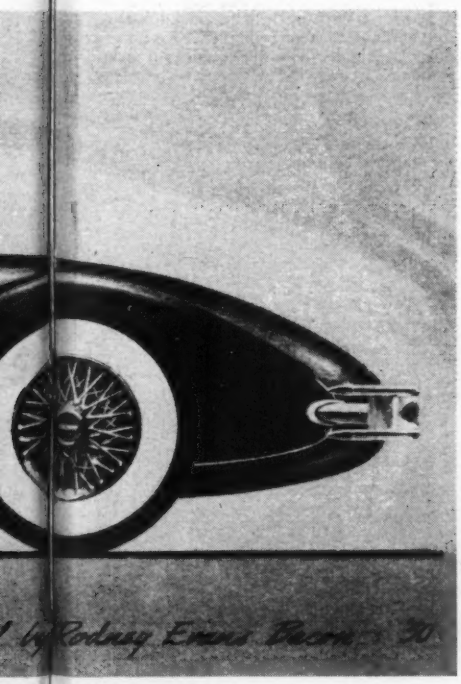
by Griffith Borgeson

NEWEST one-of-a-kind arrival on the sports car scene is this just-completed creation designed by and built for Eddie "Rochester" Anderson. The Rochester Sports Car shares its birthplace with many thoroughbreds: the shop of Emil Diedt, veteran race car builder with such famous jobs to his credit as the Blue Crown Specials, Nat Rounds' rear-engine Offy, and the Edwards Sports Car.

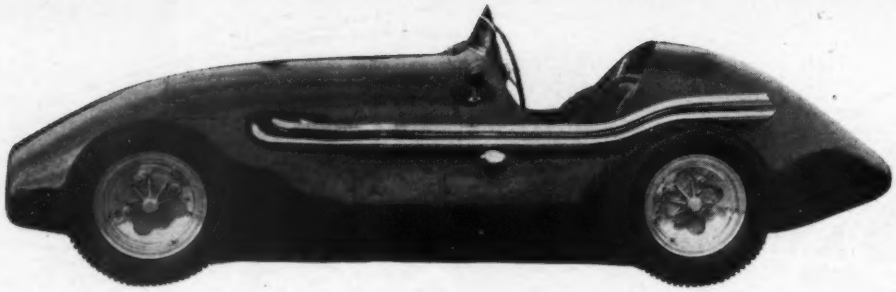
Eddie Anderson had been casing the establishments of American and European specialty manufacturers for several years, while turning over a personal car in his mind. Finally, he decided upon Diedt as the most competent man available for the carrying out of his ideas and in late September, 1950 work began on the machine illustrated here.

Anderson's conception of a competition car was very clear cut, was put in the form of a profile drawing by TV man and car enthusiast Rod Bacon. This painting and the car's general specifications were turned over to Emil Diedt and his aluminum artist, Charley Faw, for translation into live metal. Diedt says, "During the 2½ years that Eddie has been following our work I've come to have great respect for his remarkable knowledge of machinery. But when work on this car got under way he proved himself to be one of the best engineers I've come across in about 30 years in the game. He knew what he was doing every inch of the way and was always jumps ahead of us."

The Rochester Car is receiving its finishing touches as this issue goes to press. Photos of the completed machine will appear soon in MOTOR TREND.



THE ROCHESTER car is a beautifully-engineered and finished product. Amazingly enough, this painting by Rod Bacon was the sole "working drawing" on which the entire project was based, was made from sketches by Eddie Anderson. Car is shown with full road equipment: clamshell fenders, chrome-moly teardrop-section bumpers, curved V-windshield, all of which are quickly removable. Body finish is black with red trim, upholstery is red with white piping. Chrome is sparingly used

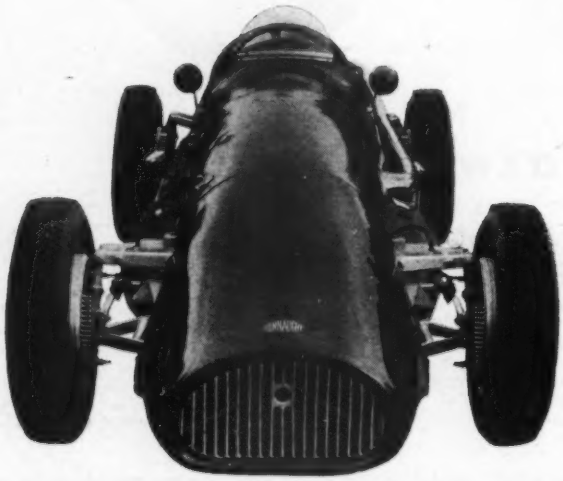


SLEEK BODY of Formula II racer is of aluminum, four-stud wheels are of cast elektron alloy. Car sells, in England, for approximately $5600

BRITISH RACING HOPE...

SPORTS CAR BUILDER PRODUCES NEW, CLEAN, ADVANCED TWO-LITRE THREAT

by A. Devereux

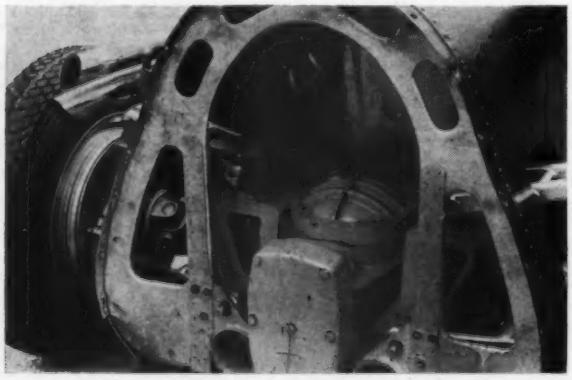


CONNAUGHT Formula II single-seater boasts frontal area of just 9½ sq. ft. Clearly visible here is double-wishbone independent suspension, grilled tube oil cooler behind grille. Steering: 1⅝ turns, lock to lock

CONNAUGHT, England's most promising newcomer to the quality sports car field (MT, Nov., 1950), has burst into overseas headlines with a new full-race Formula II (two litres unblown—122 cu. ins.) contender. The sleek monoposto, like the marque's already famous two-seater, is powered by a modified Lea-Francis 1767 cc (108 cu. ins.) engine, but there the similarity stops. The short push-rod, 90 degree-inclined ohv mill runs four Amal Type 10 T.T. carbs and a British-made Scintilla mag, develops 139 bhp at 6000 rpm, as compared with the 102 bhp at 5000 of the sports version.

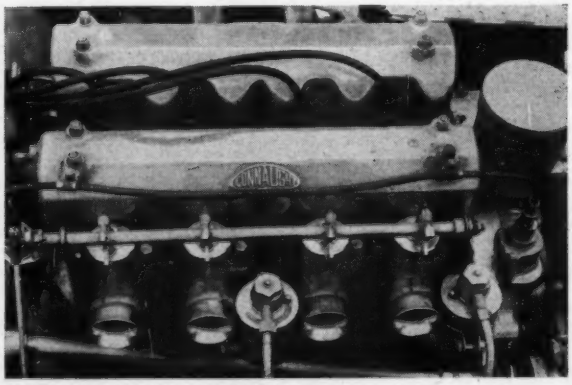
The Formula II Model chassis appears to have taken into its design every device known to latter-day racing car construction. Frame is made of 3¾-in. 16 gauge steel tubing, torsion bar independent 30 per cent variable suspension is employed all around, wheels and brake drums are of light alloy. Final drive is through transfer gears and a straight-cut ring gear and pinion with normal differential, with ZF limited-slip arrangement optional. The quick change rear end allows use of five alternative gear ratios. There are two fuel tanks, located at the center of the car so that weight distribution is not practically affected by variations in the tanks' contents. The engine's dry sump lube system is fed from a 3½-gallon oil tank which doubles as the chassis' front crossmember. Power transmission is handled by an Armstrong-Siddeley four-speed preselector gearbox. With a dry weight of just 1220 lbs., power-weight ratio is 1:8.8. Wheelbase is 85 ins.

The prototype pictured here had made one public appearance at press time, came in second in a large meet against cars up to 2500 cc displacement. Critics in the know anticipate a brilliant future for the new Connaught and builders Kenneth McAlpine, Rodney Clarke, and Mike Oliver are assembling a string of duplicates, to be ready for the '51 season.



REAR END detail shows quick-change gear housing, U-jointed half-shafts, tubular frame members. Two-leading shoe Lockheed hydraulic brakes operate in steel-lined light alloy drums

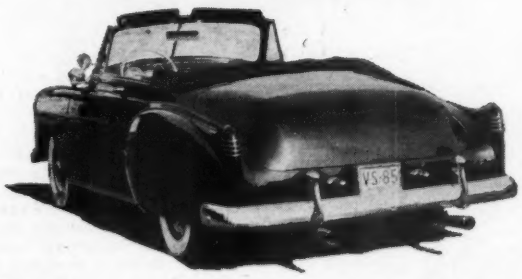
MOST outstanding feature of the famous Lea-Francis engine is its highly efficient, inclined, pushrod valve gear. Crankcase and block are light alloy, carburetors are type 10 Amal TTs



PHOTOGRAPHS COURTESY OF THE AUTOCAR

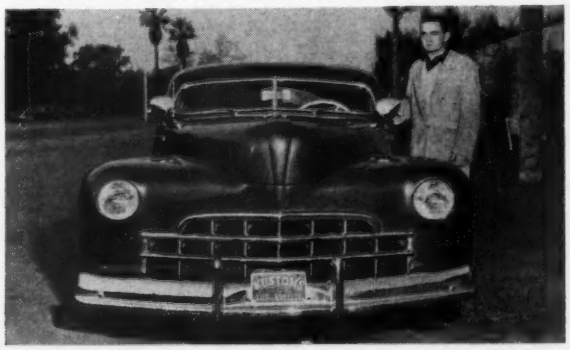
CUSTOMS—
COAST TO COAST

UNUSUAL front end treatment given this '48 Studebaker has been through use of parts from '49 Cadillac grille. Extreme lowness (4 ins. front, 9 ins. rear) was accomplished by reversing front spring, stepping rear frame, use of 6-in. lowering blocks. Interior is red and white leather to match 36-coat black lacquer finish. Owner, Max Bodkins, Calif.



BEN BISSMAN

IN EVIDENCE of what the Buckeyes of Ohio State can do is this late model Chevy. Body changes include Cad-type rear fender fins, a '42 Ford grille, and a smoothed-off turtledeck (done by Carl Ortman and Brandenburg Body Shop of Mansfield). Engine boasts an Edelbrock dual intake manifold, Harman & Collins ¾-cam, Mallory ignition, Douglas exhaust manifold. Owner of this Chevy is Ben Bissman of Mansfield, Ohio



E. RICKMAN

CHOPPED '48 Merc, customized by Barris Kustom, has a '48 Cad grille. Height has been chopped 6 ins. in front, 8 ins. rear. Car was also Z-ironed. Molded in from bumper to bumper, owner Cliff Rackohn of West Los Angeles claims to have $6000 in the car. Interior was built up from a '42 Chevy, making sitting position 3 ins. lower than usual. Trim is in tan top grain leather, upholstered by Dave's Trim Shop. Hood, deck and doors are all pushbutton-operated. Engine is full-race, Ray Brown Merc

tendance continentale

INTERNATIONAL PANORAMA

by A. Devereux

ENGLAND: Twenty million dollars in American orders for the new Mark VII Jag were placed at Earls Court in October, even before its first U.S. showing. The car sells for $3850 delivered in N.Y.—an outstanding buy. . . . From the fascinating correspondence pages of *The Motor* (London) comes this contribution to automotive folklore. Question: Why do the English drive on the left side of the road? Answer: The custom began during the Dark Ages, when all travellers were armed. Men rode on the left in order to meet "oncoming traffic" sword arm to sword arm. Even with the advent of pistols the custom still served its function; it's not too good an idea to fire across your horse's head. Today the custom is under attack and many authorities are suggesting that Britain move over to the same side of the street as most of the rest of the world, which follows the American right hand (post Dark Ages) path. . . . The R.A.C. has awarded the Campbell Memorial Trophy for the most outstanding performance by a British car during 1950 to Ian Appleyard, who, among other achievments with the same car, drove his Jag XK-120 through the 2000 miles of the French International Alpine Trial without loss of marks, making the best performance of the event.

ARGENTINA: At last the long-heralded Cisitalia plant near Buenos Aires is going full bore, employing about 1800 workers. It's essentially an assembly plant, is under the direction of the Cissy's originator, Piero Dusio. Parts for the Argentine car are being made at the old works at Turin. The new Cisitalia is called the "Autoar," is powered by a four-cyl. engine of about two litres (122 cu. in.) displacement, pulls 65 bhp, is said to be good for 26 mpg and 77 mph. The magnificent rear-engined Cisitalia G.P. racer has also been shipped to B.A., for reasons that remain obscure.

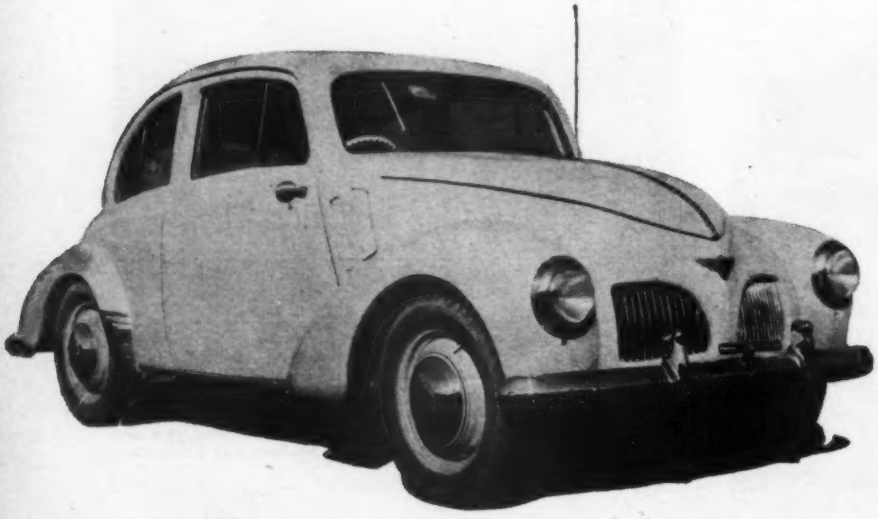
GERMANY: It's now official that the Veritas Company has gone completely under. A sad ending to an enterprise with a brilliant future, but poorly timed to an impoverished present. . . . Rumors to the effect that a German national racing car, a cooperative project slightly along BRM lines, would appear in the near future have been squelched. The matter has been seriously considered, it's true, but German auto manufacturers have discovered that the failure of native cars to win last year at Nurburgring has had no adverse effect on exports. Therefore, talent and funds will not be diverted from desperately needed reconstruction. . . . Owners of cars equipped with Dewandre-type vacuum booster brake systems will be interested to know that the Robert Bosch firm has resumed manufacture of this equipment and can supply replacement components.

ITALY: Boano, top man of the Italian GHIA coachbuilding firm, has returned from a trip to Detroit, with a contract in his pocket naming him styling consultant to Chrysler, effective with introduction of '52 models.

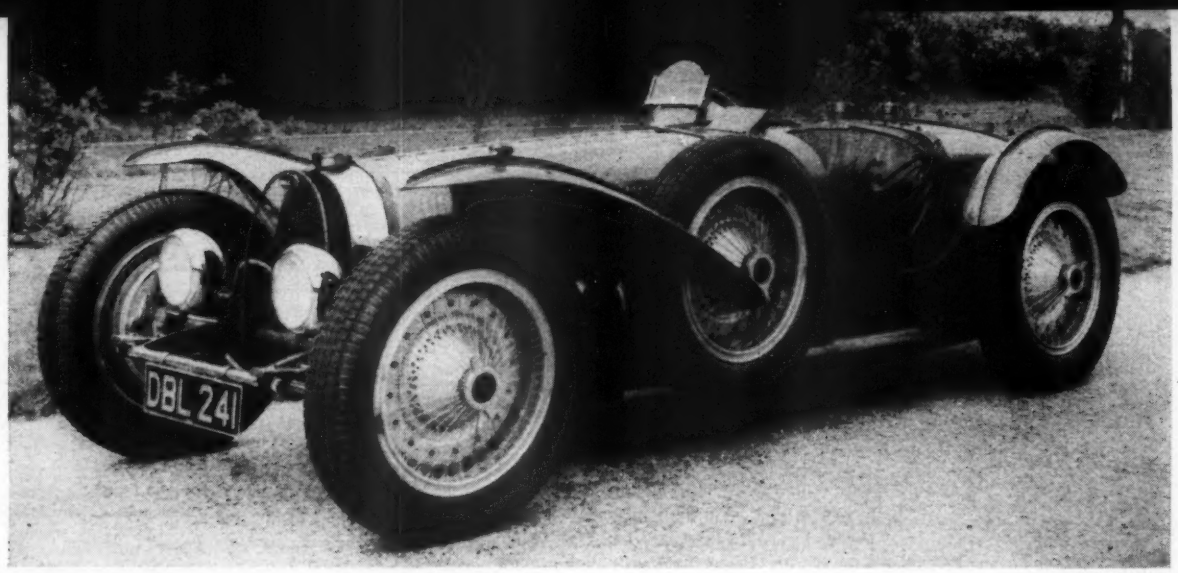
JAPAN: One of these islands' best-known home-produced cars is the Toyo-pet (see photo). The sedan, on a 94½-in. wheelbase, is designed to carry four passengers in solid comfort. The car is made to very high standards, has a chassis consisting of "backbone" type frame, independent springing fore and aft, swing axles at the rear and a compact four-cyl. side valve engine. This has a displacement of 61 cu. ins. and develops 27 bhp at 4000 r.p.m. Transmission is fully synchro and shifting lever is located on the steering column. The little Toyo-pet will go 55 mph and claims the amazing figure of 48½ mpg!

SPORT: Alfa-Romeo will run more cars in fewer races this year, will concentrate solely on the Grandes Epreuves—the international meets which will decide '51's World's Championship. These classic events are: the British G.P. at Silverstone on May 5, the Swiss at Berne on May 27, Indianapolis on May 30, the Belgian at Spa on June 17, the G.P. of Europe at Rheims on July 1, the German at Nurburgring on July 29 and the Italian winder-upper at Monza on Sept. 2. Alfa, it's said, will run as many as five cars and Farina, Fangio, and Fagioli have been named to continue with the works team. The other two drivers are as yet unannounced. Alfa fuel tanks will be enlarged from 42 to 56 gallons for the G.P. d'Europe (372 miles), shooting for one fuel stop per car. And an inside spy at the Alfa factory reports work well in progress on an eight-cyl. 500 cc engine. . . . Tatra, in Czechoslovakia, has come up with a two-litre monoposto racer. . . . A gigantic cross-country road race is due to take place in Australia this year, will cover 2000 miles, from Darwin to Alice Springs and return. . . . Coopers, frisky, famous British lightweights, have gone through another weight purge and the '51 version now tips the scales at 500 lbs. —15 per cent under last year's model and a new threat to the threatening Kieft. . . . For several years before the last war one of the bright events of the European winter season was the South African G.P., held in December or January. Rebirth of this event is quite likely this year, will probably be held in July or August as a national meet, by way of qualifying for future international status. . . . Perhaps the first national G.P. for 500 cc machines alone will be the G.P. of Luxembourg, to be held on May 3 and to consist of two 28-mile heats and a 58-mile final. . . . The Le Mans 24-hour Grand Prix d'Endurance will roll again on June 23 and 24. There will be no eliminating race this year, about 60 entries are anticipated, and prototypes will be accepted. This last comes as a relief to many builders, worried by the Monte Carlo Rally regulations, suddenly turned hostile to certain very competitive types of equipment. Clarification of the new Monte Carlo regs comes from Antony Noghes, president of the town's International Sporting Club. He says, in part, "Originally only real touring cars entered for the Rally, but for several years past competitors have shown a tendency to enter . . . cars which have considerable alterations to the normal type. In order to preserve its true character of a touring competition, we feel it our duty to protect, as far as possible, competitors with touring cars against competitors with competition cars. The only means we have of doing this is to allow only

(*Continued on page thirty-two*)

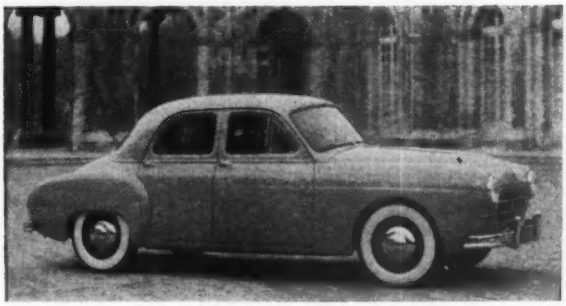


WELL-MADE Japanese Toyo-pet has lines similar to Volkswagen, but engine is forward-mounted. Four-wheel independent suspension is a feature



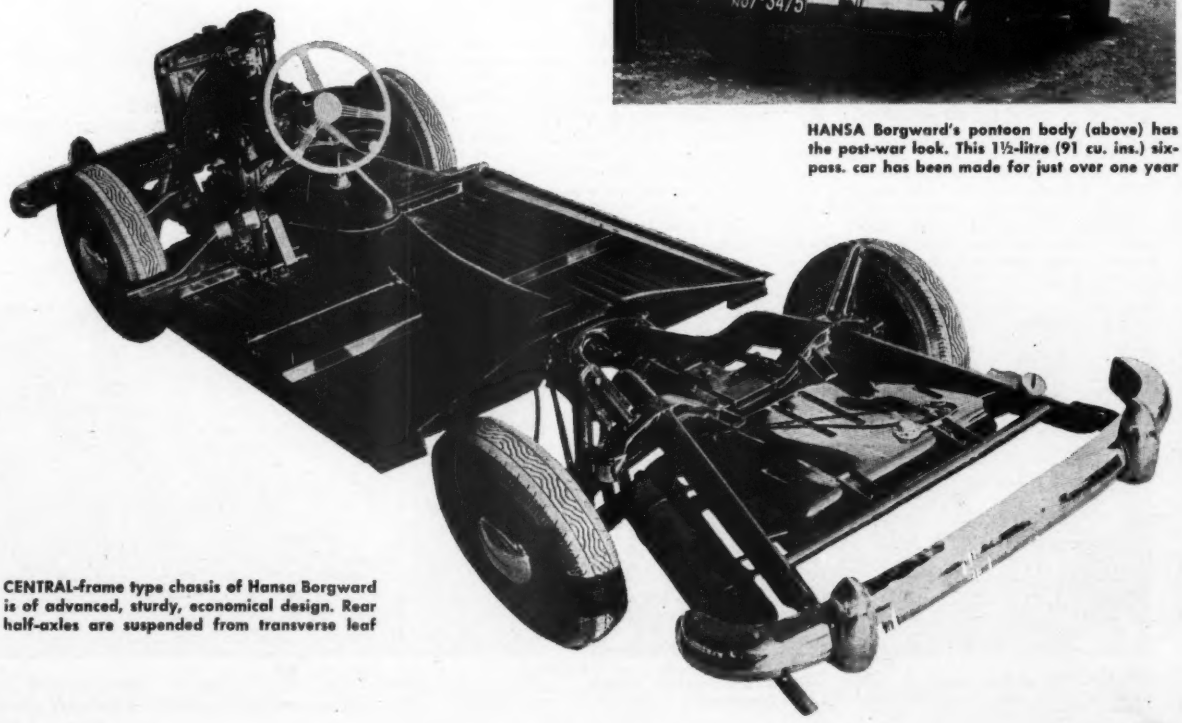
KEITH DANNATT

TYPE 59 Bugatti (above) in full road trim. About six of these super-fast Bugattis are known to exist today. Note the "piano wire" wheels

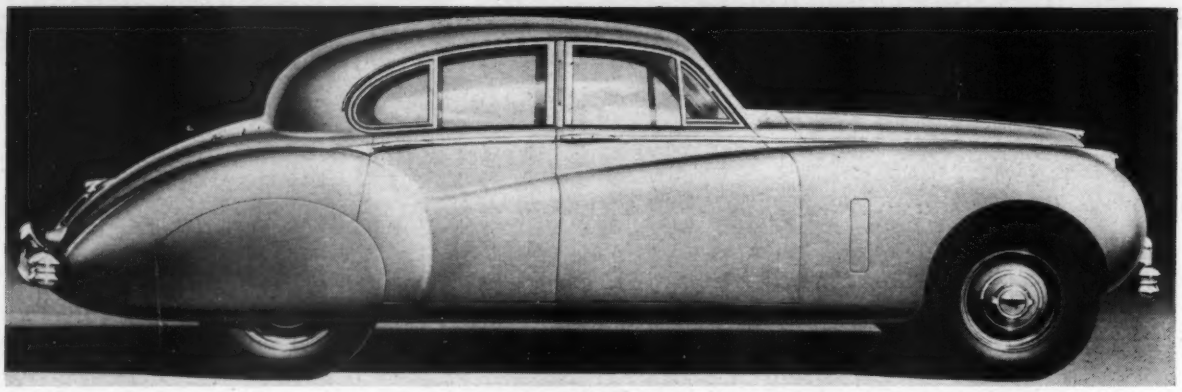


FAMILY-SIZE Renault (left) released to the French market this winter is the two-litre (122 cu. ins.), ohv pushrod operated four-cyl. "Fregate"

HANSA Borgward's pontoon body (above) has the post-war look. This 1½-litre (91 cu. ins.) six-pass. car has been made for just over one year



CENTRAL-frame type chassis of Hansa Borgward is of advanced, sturdy, economical design. Rear half-axles are suspended from transverse leaf



MARK VII Jaguar is equipped with the celebrated XK-120 engine. S-curves in the body contours have been abandoned in favor of more spherical "American" lines, traditional radiator is retired

standard series-built cars to compete. But on this point there is another distinction we feel should be made, between the type of car for which a certain type of engine is exclusively built, and the type equipped with an engine not usually built by that make, an engine usually more powerful than that provided originally by the manufacturer, or mounted in a lighter chassis. . . . There are, incidentally, French makes affected by this particular regulation." . . . With official recognition by the F.I.A. of last August's Austin A-40 records at Montlhery, Austin's total of records broken reaches 171 for a 16 month period! The breakdown: five international, 39 U.S. national, five French, 18 Indianapolis, five Montlhery, 99 U.S. stock car records. . . . Pregnant suggestion from a correspondent of *The Motor* (London) holds that Jaguar could do no better than to produce a 4½-litre (274.5 cu. ins.) version of the XK-120. What would this extra 1000 cc give? Aside from a much more potent touring car and one practically as economical due to lower revs for given speeds, English racing men would then have a reasonably cheap engine to develop for Formula I G.P. competition. This displacement, unblown, is good enough for Indianapolis, OK with Tony Lago, is Ferrari's challenge to Alfa-Romeo. Moreover, a 4½-litre XK-120 should have nothing to fear from the growing numbers of Cad-engined juggernauts in sports car events. Our guess is that the forward-looking Jag factory is a few jumps ahead of such ideas.

WHO'S WHO IN THE TRADE: John Sheridan and Fred Bodley are the Rolls-Royce specialists of the Los Angeles area. They are specialists in *service*, with truly outstanding qualifications. The firm's senior partner, Mr. Sheridan, was born in Dublin a good many years ago, studied mechanical engineering at Dublin University, went to work for Rolls-Royce at Derby in pre-Kaiser war days. He came to the U.S. in time to enter the American Air Force and in 1919 resumed work for R-R as service man at their N.Y. agency. R-R of America opened the Springfield plant in 1920 and Sheridan was transferred there, where his practical and theoretical experience was put to full use. Sheridan became service manager of the L.A. R-R office in '25, trained all West Coast R-R mechanics, took over ownership of the L.A. office in '34, closed up in '39. S.A.E. member and licensed pilot, he moved right into the wartime aircraft industry as a test engineer. Here he met ace mechanic Fred Bodley, trained him in R-R mysteries, and in '49 these men opened their own fine car service agency at 8515 W. Pico Blvd., L.A. Here the skill, factory service bulletins and blueprints of decades reside and here Rolls, Bentleys, and all fine cars are cared for properly.

CAR OF THE MONTH is Germany's Borgward "Hansa 1500," in production for just over a year. It is one of Europe's true post-war autos, draws on advanced ideas from Old World and New. Hansa's wheelbase is 102 ins. but there is adequate room for six passengers and such luxury features as thorough air-conditioning, convenient jacking, abundant luggage space are nicely cared for. Pontoon body is streamlined with great care in the interest of obtaining top economy and performance from minimum engine size. The power package is a pushrod four of 1498 cc (91 cu. ins.), pulling 48 bhp at 4000 rpm, drives through a four-speed box. Independent suspension is used on all wheels, swing axles and a transverse leaf accounting for the arrangement at the rear end. The car weighs 2360 lbs., has a top speed of 75 mph, gets 26 mpg.

SPORTING CALENDAR

In addition to the Grandes Epreuves (see Sport), these are major events scheduled for the coming season:

APRIL
15 Inter-Europe Cup Race, Italy
22 San Remo G.P., Italy
29 Mille Miglia, Italy

MAY
3 G. P. of Luxembourg (500 cc)
13 Monza G. P., Italy
20 Paris G. P., France

JUNE
9-10 G. P. of Rome, Italy
14 Isle of Man Road Races
16-17 Austrian Alpine Rally
23 Shelsley Walsh Hill-Climb, England
24 Naples G. P., Italy

JULY
8 Bari G. P., Italy
13-21 International Alpine Rally, France
14 British G. P., Silverstone
22 G.P. of The Netherlands

AUGUST
6 500 cc Meet, Brands Hatch, England
15 Pescara Race, Italy

SEPTEMBER
1-2 Nurburgring 24-hour Endurance Race, Germany
9 Prescott Hill-Climb, England
15 Tourist Trophy Race, England
16 Targa Floria, Sicily
22 Shelsley Walsh Hill-Climb, England

OCTOBER
28 Pena Rhin G. P., Spain

ROLLS-ROYCE service based on factory training, plus decades of experience, is offered by John Sheridan (r.) and Fred Bodley (l.) of L.A.

1000TH DKW "Meisterclasse" rolled from the Duesseldorf assembly lines this winter . . . car is already a national best-seller, exports are planned

ACCESSORY TRIALS—HEADERS

THE BREATHING efficiency of an engine is important—but, unfortunately, it's usually taken for granted. The breathing system is as necessary to an engine as lungs are to humans.

Can you imagine how you would feel if you began to take deeper breaths, but exhaled the same amount as before? Shortly, you would be choked up so that you couldn't breathe at all. This is similar to the way that "back pressure" affects your engine.

If you increase the intake flow of your engine you naturally have to increase the exhaust flow. Otherwise, the additional charge in each cylinder, not having the proper volume to thoroughly expel itself, will result in back pressure.

Back pressure is a positive resistance to exhaust flow caused by restrictions in the exhaust manifolds and the muffler. The smaller the pipes and the more constrictions that the exhaust system have, the more the back pressure will be. Under ideal conditions, the piston pushes a displacement volume of gases out of the cylinder during the exhaust stroke, in turn displacing the exhaust gases in the exhaust system. With a properly designed system, these gases push along the gases previously exhausted.

Back pressure is created when the exhaust system is not capable of handling the amount of gases forced into the system by the discharge from the cylinders. This, in turn, causes a contamination of the cylinder intake charge, undue pressure against the piston heads and an overall loss of efficiency.

Recently, a series of tests were conducted by the Southern California Muffler Co. to determine what various combinations of exhaust header and muffler systems were the most efficient. It was found that the amount of back pressure varied from 4¾ to 2 lbs. with stock manifolds and mufflers (see below—1) to no back pressure with exhaust headers and dual steel-packed mufflers (6).

Types of systems tested included the following: (1) stock manifolds, mufflers and tailpipe, (2) stock manifold, single 22-in. straight-through, steel-packed muffler, (3) stock manifolds, dual 22-in. straight-through, steel-packed mufflers, (4) stock manifolds, dual stock mufflers, (5) exhaust headers, single, extra large, straight-through muffler, 2-in. dia. tailpipe, (6) exhaust headers, dual stock mufflers, and (7) exhaust headers, dual straight-through, steel-packed mufflers.

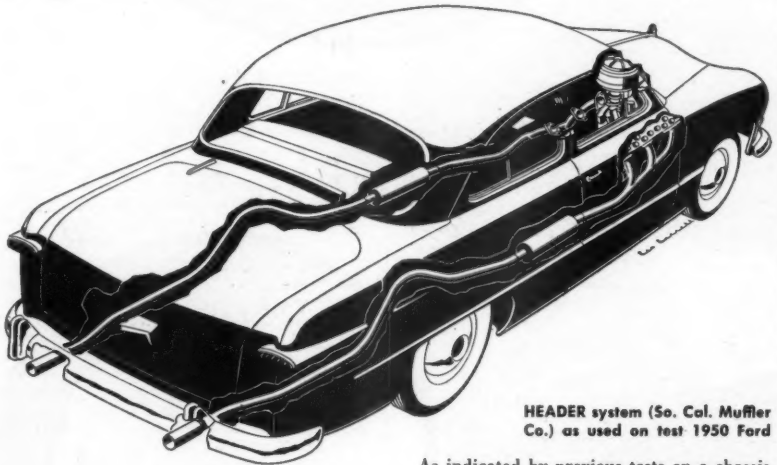
In driving a '50 Ford equipped with exhaust headers and dual straight-through, steel-packed mufflers, several important differences in performance were noted. Among these were easier starts, more acceleration, increased mileage and more hp output.

Immediately after the installation of exhaust headers on the car, it was found that the engine started on the first crank of the starter instead of taking several cranks as it did previously. On cold mornings, the car also started much more easily than before.

More acceleration is apparent in all gears. The certain amount of hesitation that is evident in a car with a stock exhaust system was eliminated, due to the improved breathing condition of the engine. Top speed was increased by 2½ mph.

Mileage checks performed before and after the Southern California Muffler Co. headers were installed, showed an increase in mileage up to two mpg. Test figures before and after are shown below.

CONDITION	STOCK SYSTEM mpg	HEADERS mpg
Light Traffic	16.27	18.0
At a steady 30 mph in conventional	23.52	24.51
At a steady 30 mph in overdrive	24.50	26.50
At a steady 45 mph in conventional	18.62	19.25
At a steady 45 mph in overdrive	24.01	24.75
At a steady 60 mph in overdrive	21.07	21.77



HEADER system (So. Cal. Muffler Co.) as used on test 1950 Ford

As indicated by previous tests on a chassis dynamometer, the road hp output (hp actually delivered at the rear wheels) was increased by six. The output of the stock setup was 58 road hp at 60 mph, while with the headers and straight-through mufflers, the road hp was 64 at 60 mph.

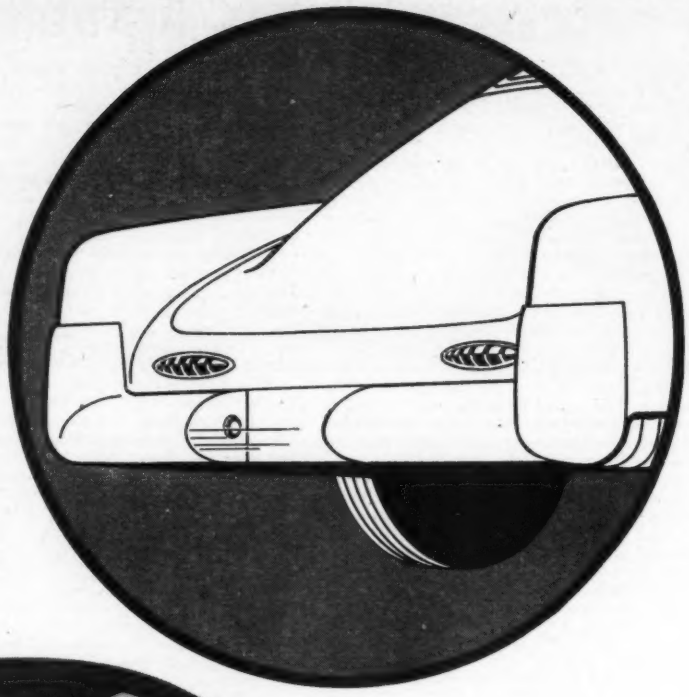
Types of systems available for 1935 to 1951 Ford V-8s and Mercurys include headers only, headers with steel-packed mufflers, and headers with an oversize, single, steel-packed muffler. These can be set up in various combinations, so that headers can be used with stock mufflers or with straight-through mufflers, depending on the tone that the individual wishes to obtain from his car. The loss in efficiency using stock mufflers with exhaust headers is practically nil—the important thing is to make every part of the system as perfect as possible.

Similar systems can be had for 1949-51 Oldsmobile 88's and 98's, although the price is slightly higher. A complete header installation for a Ford and Mercury is $52.50 (not installed) as versus $74.50 for the Oldsmobile. In either case, however, the advantages of the Southern California Muffler Co. header system over the stock setup were definitely proven to our satisfaction.

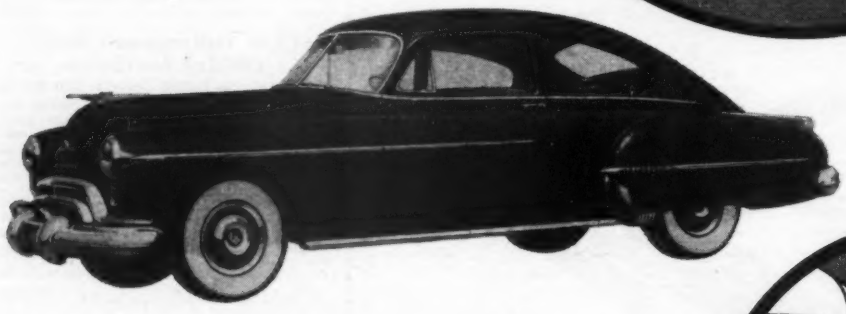
—W. W.

WHAT'S YOUR IDEA?

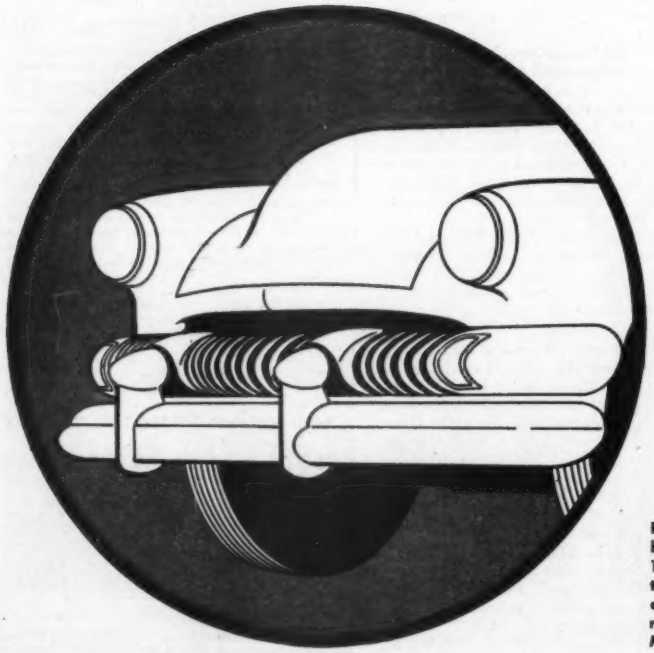
NOTE: On this page are featured drawings of how a '50 Oldsmobile would look if it were "Mercurized." These suggestions were submitted by Rex Burnett, well-known MOTOR TREND *contributor. Now, it's YOUR turn—to submit ideas on how you think a certain model car could be customized. Or maybe you already have unusually restyled a car and have photographs of it. In any event, submit your ideas, with photos, sketches, drawings (if you can't draw, describe it—we'll draw it). We want this to be YOUR page—a place where* MOTOR TREND *readers can exchange styling ideas. What's YOUR idea?—Editor*



REAR END of Olds is enhanced by adding '48 or '49 Cadillac rear bumper. Rear bumper is reworked by removing center section, leaving depression for license plate. Plastic license cover formed to contour of bumper. 1949 or 1950 Ford tail light frames and lenses are used



SIDE REAR of Olds 88 is restyled by replacing stock rear fenders with Pontiac fenders. Underside of rear fenders to be removed and replaced with chromed sheet metal shield as illustrated. Shields may be given a louvred effect (similar to rear shields on '51 Mercury) by scoring metal. Scored line to be painted black



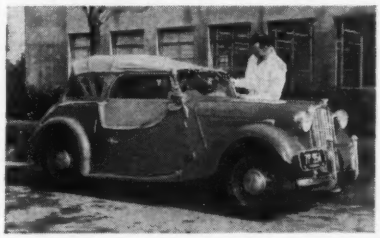
FRONTAL AREA of 1950 Oldsmobile 88 restyled by replacing stock grille and front bumper with 1951 Mercury grille and bumper. This necessitates some sheet metal work, such as filling in air intakes under headlights and reforming metal around grille. One solution is to use Mercury sheet metal parts as a substitution

Sports Trial

(*Continued from page twenty-five*)

ing experience I learned that the long stroke engine delivering good torque at low rpm made a close ratio box less necessary. Actually the ratios permit all normal driving without having to run the engine up to high speed on the indirect gears.

The Singer's performance is very good considering the relatively small displacement and



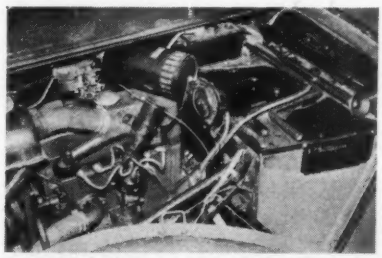
WET WEATHER equipment includes neat top and side curtains. DeLuxe curtains with sliding glass panels as shown are optional extra. Top folds into concealed well behind the rear seat

the fact that the car carried full touring equipment in all the timed tests. In evaluating the figures in the Table of Performance, it should be borne in mind that all tests excep: the standing-start ¼-mile were conducted with two large adults aboard. For a car of the Singer's overall size and weight, this must be considered very nearly a full load. With a driver alone, the figures obtained would have been still more favorable.

During nearly 300 miles covered during the tests, the Singer held its own in speed and acceleration with all normal traffic, both in town and on the highways. The car accomplished its acceleration tests in rapid sequence with no evidence of fuss or overheating. Top speed runs were smooth and the car felt perfectly tractable at all times.

Brakes are of the latest design by Girling. These are mechanical brakes and although among the finest obtainable of that type, it must be stated that they are not equal to hydraulics for high-speed. Higher than usual pedal pressures are required and a slight tendency for the car to wander under the stress of emergency braking was noticed. Even so the stopping distances recorded in the tests were comparable to those of other cars.

Operating economy is, of course, one of the Singer's strongest features. There are very



ENGINE compartment is well planned. Tools neatly arranged in clips. All filler caps and battery are readily accessible for easy servicing

few cars which can consistently record up to 30 mpg in traffic. Highway tests gave still better readings. At 45 mph, 30.18 mpg was obtained and at 30 mph the car delivered 36.50 mpg.

In quality of finish and treatment of details, the Singer seems highly satisfactory. The upholstery is neat and well tailored. Top and

(*Continued on page forty-seven*)

THE SPORTING SCENE

CALENDAR OF EVENTS

Feb.	17	Meet and dinner, New Eng. SCCA.
	20-25	2nd Annual Natl. Roadster Show, Oakland, Calif.
	25	2nd Annual Spring Rally (Reliability Run) So. Cal. SCCA.
	25	Calif. Sports Car Club Meet at Carrell Speedway, L.A.
MAR.	3-10	Natl. Auto Racing Exposition, Hartford, Conn.
	6-7	Mobilgas Grand Canyon Economy Run —L.A. to South Rim of Grand Canyon.
	17 or 18	T&T, New Eng. SCCA.
	21-24	Pacific Automotive Show, Civic Aud., Seattle, Wash.
	31	Practice for Palm Springs Road Race, Sports Car Racing Assn.
APR.	1	Palm Springs Road Race.
	14-15	Reliability Trial, Calif. Sports Car Club.
	15-23	British Auto and Motorcycle Show, Grand Central Palace, N. Y.
	22	Spring Running of Sandberg Speed Hill Climb, S. Cal. SCCA.
	—	New Eng. SCCA meet at Thompson, Conn.
JUNE	17	El Segundo Standing Quarter Trials, S. Cal. SCCA.

SCCA MEMBERS, MORE than 200 strong, gathered for the club's annual meeting in New York on January 20, elected '51 officers as follows: Cameron Peck of Chicago, President; Fred Wacker, Jr., of Chicago, V.P.; Phillip J. Cade, Secretary; Dr. Henry R. W. Finn of Jersey City, Treasurer; Karl F. Kucker of Washington, Conn., Editor. In other words, SCCA's 1200 members will continue to be guided by substantially the same panel of officers as last year. . . . Two major trophies were awarded at the dinner following elections. The Thomas McKean Memorial Trophy, presented each year to the member whose sportsmanship has been most outstanding, went to George Huntoon of North Miami, Fla., who tossed away his chances in the last Watkins Glen Seneca Cup Race in order to rally 'round a competitor whose car had left the road. The Woolf Barnato Trophy, awarded annually to the member contributing the most to SCCA during the year, went to Briggs Cunningham for his superb representation of the American sport in the '50 Le Mans.

★ ★ ★

HANDICAPPING AT THE otherwise excellent Sebring six-hour meet was not entirely above criticism. The actual Le Mans formula for minimum distance (d) to be covered is:

$$d = .23 \left(\frac{3000 \times c}{c+350}\right) .62$$

where (c) equals displacement in cubic centimeters. This formula applies to an 8½-mile course with a lap record of 102 mph. Sebring's course measures 3½ miles, has a lap record of 71 mph. There was much opinion to the effect that the formula as it stands puts big-displacement cars at a disadvantage on the Sebring circuit. We can be sure that, if this is the case, appropriate modifications will have been made by the time next year's already-scheduled 12-hour run takes place. . . . The Sebring performance of Ferrari-mounted James Kimberley and Marshall Lewis was very impressive, if not victorious: they were turning the course in just over three minutes, lapping the winning Crosley about every fourth time around. At the same time the little Hotshot was doing nicely, getting around in between 3:40 and 3:50.

★ ★ ★

"THE SPORTS CAR ENGINE," by "Calculus" (technical writer for *Motor World*, Glasgow) is a new Floyd Clymer publication that fills a vast and gaping need. The enthusiast who has spent long hours ferreting performance secrets from the verbal jungles of *Audel's* and *Dyke's* will find the "Calculus" opus an answer to a prayer. It's compact (110 pages) and written with the sole object of stating simply and concisely information about sports car and high-performance engines that can ordinarily be found only in the most esoteric technical literature. The book's chapter headings give an excellent idea of the ground covered:

Principles of Induction Systems for High Speed Engines
Mechanical Design for High Power Output
The Design of the Cylinder Head
Lubrication of the High Efficiency Engine
Ignition for Sports Engines
Forced Induction Systems (Supercharging)
Power and Performance
Tuning the Standard Sports Engine

Drawings, charts, and photos are profuse; the book's price, $1.50.

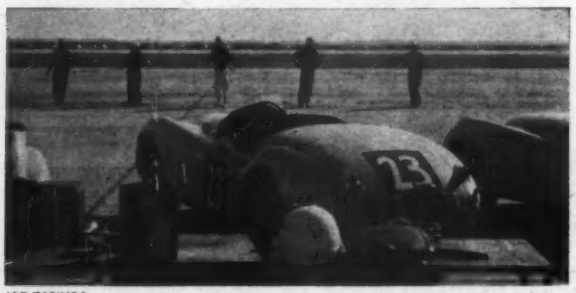
★ ★ ★

AAA SPRINT CARS rolled at Carrell Speedway on January 21, bucked a tough-to-beat combination: Troy Ruttman, tooling a going hot rod, had cut his eye teeth on this track when it was known as the Gardena Bowl; his car, 98 Jr., had been tuned to perfection by Clay Smith, mechanic for last year's fastest qualifier at Indianapolis; and, not least, golden-touch Agajanian stood behind the team. Young Troy hauled off and set fastest qualifying time of the day, snatched the Trophy Dash neatly away from Duane Carter, won his heat. The track was rough in spots when the main came around, but Ruttman knew where to go to keep out of trouble. Starting seventh in a field of 14 cars, he jumped into the lead going into the second lap. By the fifteenth time around, he had lapped the entire field and what race was left was between Duane Carter in the Malloy Dirt Special and Johnny Parsons in the Parsons Offy. They finished in that order, with Walt Faulkner, Johnny McDowell, Bill Cantrell, and Jack McGrath taking the crumbs.

★ ★ ★

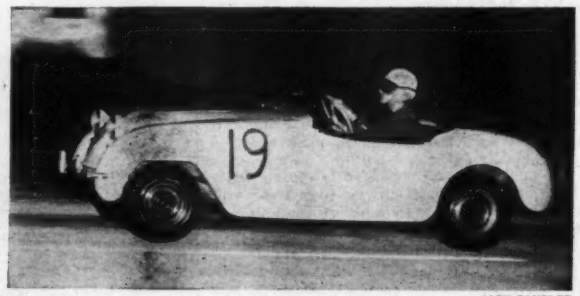
E. RICKMAN

TROY RUTTMAN, throwing dirt into the next county, takes lead on the outside at Carrell Speedway's January AAA Sprint Car meet



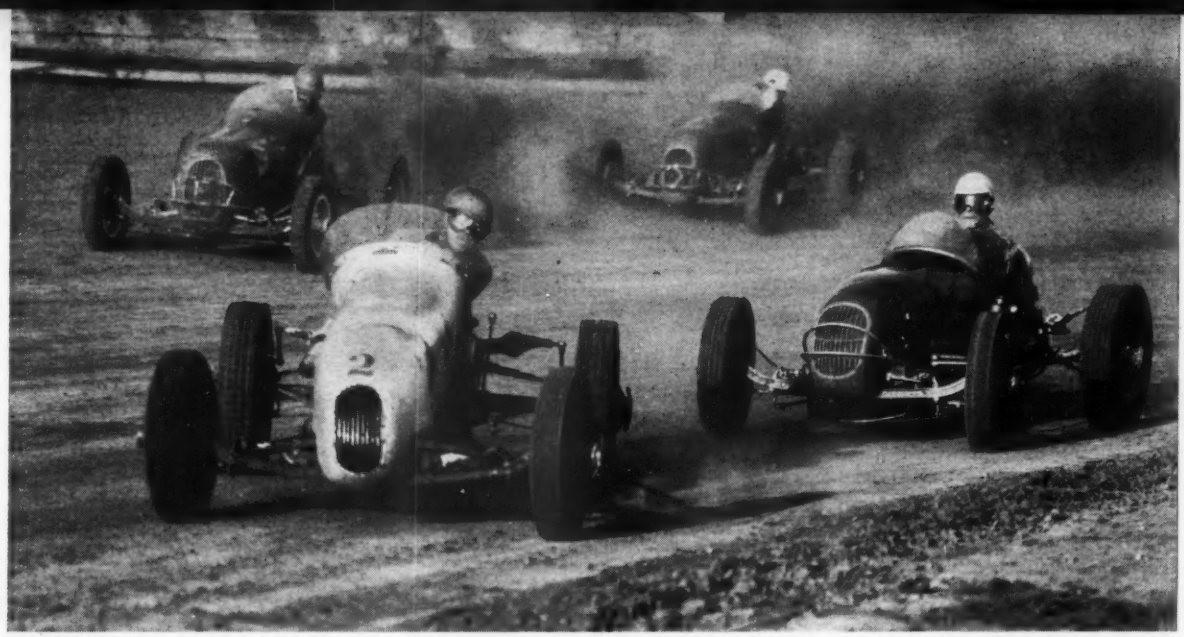
JOE TASHIRO

LE MANS-style start requires drivers to race across track at signal, fire up engines, make sweeping turn onto course. All classes run together



JACK CANSLER

NIGHT SHOT at Sebring: Ralph Deshon of New York pilots the victorious Crosley with alert, relaxed style. Complete story on page eighteen



E. RICKMAN

DUANE CARTER (No. 2) cocks his mount at an aggressive angle, leads the pack through turn

MOST IMPRESSIVE, LONGEST, and most grueling reliability run yet to be held on the West Coast was the Press On Regardless organized by E. Forbes Robinson for the California Sports Car Club and run on January 20-21. Thirty entrants, each carrying his own *sealed* time-piece, left Los Angeles at 9 P.M. with detailed instructions outlining a rigidly-controlled 426-mile course running to San Juan Capistrano, Palm Springs, over deserts and mountains, and back to Burbank —each entrant agreeing to cope with any trouble as best he could, and, as the name demands, press on regardless. Most did, and in spite of 54 miles over dirt roads and other such challenges to navigational ability, five cars finished without loss of points on reliability. Perfect scores were, however, short-lived, thanks to shakedown tests at the end of the trail. First five places were: Bill Cramer, XK-120, lost 2.5 points; Bud Whittenberg, XK-120, lost 6.5 points; Don Parkinson, XK-120, lost 8.0 points; Lewis Scroggins, XK-120, lost 16.0 points; and Danny Ames, MG TD, lost 19.0 points. . . . The sealed-watch idea is a good one since each entrant runs solely by his own watch, is neither penalized nor benefited by variations between his own timepiece and those of the officials. It was, incidentally, demonstrated on this run that losing one's way is frequently a far more important source of lost points than equipment trouble. The event, in spite of its duration and stiffness, was just a warmer-upper for tougher tests in the future. Next installment will be run April 14-15 (tentative). For entry information write E. Forbes Robinson, c/o International Motors, 5670 Sunset Blvd., Los Angeles.

★ ★ ★

THE SECOND ANNUAL Palm Springs Road Race will take place on April 1, with practice the day before. The circuit has been improved markedly since last year. Some brake-tormenting turns have been eliminated and the length of the course has been extended to about 2½ miles, with the longest straightaway being just a half-mile long. The race, you may recall, is run over streets and bomber runs. This year's entries are expected to total close to 50; if you want to be among that number, write Sports Car Racing Assn., P.O. Box 1031, Beverly Hills, Calif. . . . The California Sports Car Club will hold a widely-varied meet on the half-mile track at Carrell Speedway on February 25 in which all sports car owners are invited to participate. The program had not been completely worked out at press time, but it's sure to be a good one. One big attraction of the event will be the probable debut of Phil Hill's new 2.9 litre supercharged Alfa Romeo. Entry information can be obtained by writing the club at P.O. Box 11442, Briggs Station, Los Angeles.

★ ★ ★

IN ANTICIPATION OF sports car racing during the coming season, and perhaps to adjust fans to the sight of MG's, Singers, etc., sports cars were paraded around the track at the final event of the '50 Houston (Texas) stock car season. This somewhat unusual feature was the idea of promoters O. D. and Ray Lavely, who have put track racing on the post-war map in this part of the country. Some of their other notions have been including female drivers in the line-up, and billing above-mentioned event as the "200-Lap Texas Grand Prix." Tommy Magnum won it, incidentally, and, consequently, the Houston championship too.

★ ★ ★

PALM BEACH SPEEDWAY, Florida's newest ½-mile oval, held its opening race on December 31: a hardtop festival. The stands hold 5500 and 5200 fans turned out for the curtain raiser, saw Dick Eagen of Tampa take the main event and receive his trophy from Bill Holland. . . . And in the same neck of the woods, we hear of the opening of a new specialty broker, Unusual Automotive Sales Co., in Griffin, Georgia. If you want to buy or sell a sports car, midget, roadster, classic, or what have you, see them.

★ ★ ★

SPORTS CAR FANS in the Houston (Texas) region should be in touch with the Mustang Sports Car Club, 3764 Garnet St. The group has about 22 members and although emphasis is upon contemporary sports cars, veterans and classics have their place and competition events for them are included in a well-filled calendar. Mustang officers for '51 are Frank Mills, President; Dr. J. S. Cunningham, V.P.; George Patrick, Financial Secty. Mills is the owner of the Southwest's hottest TC, holder of local standing ¼- and ½-mile dirt track records. . . . Election results from SCCA New Eng. Region list these officers for the present year: George Weaver, R. E.; Bill Kemp, Activities Chairman; Peter Crocker, Treasurer; Karl Kucker, Secty.

★ ★ ★

NASCAR's *Second Annual Yearbook* is now off the press, contains 400 photos and—surprise!—includes pictorial coverage of the Sebring SCCA race. Jack Cansler took about a hundred snappy pix at that meet and prints can be had. Write him, care of this page, for a list of available Sebring and Palm Beach Shores race shots. —G. B.

DICK EAGEN (No. 1) fought second-place man Al Keller (No. 23) all the way to win first race at Florida's newest ½-mile banked oval, Palm Beach Speedway. Track plans an event-packed season

TOM GOSCH

1. DRIVES along at 50 mph in 35 mph zone.

2. SEES patrol car in rear view mirror.

THE "SPEEDER"

Text and Photos by Eric Wahleen

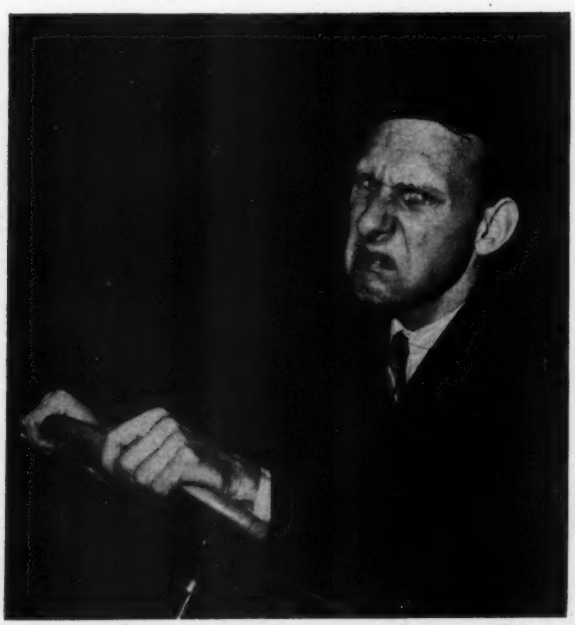
3. DECIDES to make a dash for it.

4. HEARS fateful siren.

5. PULLS to a stop and waits resignedly. Knows he's caught flat-footed.

6. GOOD-MORNING, Officer!

7. I COULDN'T have been going that fast!



8. TRAFFIC Court tomorrow at 10 a.m.? Fine thing.

CLASSIC COMMENTS

by Eugene A. Jaderquist

FRANKLY, I don't care who wins the Academy Awards in Cinema Town this year. It is already a certainty that my own nomination will appear nowhere in the parade of glamour to and from the presentation table. The arrogant Isotta-Fraschini that carried Norma Desmond to her pathetic interview with Cecil B. DeMille in Paramount's "Sunset Boulevard" will spend that night in a lonely stall.

The photo below shows the Isotta as it was before the studio lined it with leopards and dressed it in basket-weave pants. It was sent to the United States in 1930 as a gift from Mussolini to Samuel Untermeyer, one of the East's leading attorneys. In 1936, Pacific Auto Rentals bought the car to add to their large collection of classic and sport cars for movie use. In the 15 years since then it has never been necessary to do any repair work on the car.

The Isotta-Fraschini was Italy's most glamorous automobile, a $20,000-and-up competitor of Rolls-Royce and Hispano-Suiza. Most of the Italian coachwork was done by the house of Castagna in Milan. This particular automobile is a laundelet, built with the same loving attention to detail that has made Italian craftsmen famous since the Renaissance. In design, it is a graceful compromise between the homely, honest Rolls and the delicate, flowing lines of the French carriagemakers.

Important specs: 8 cyls. in line; bore 95 mm; stroke 130 mm (about 3¾x5⅛ inches); capacity 7.3 litres (445 cu. ins.); 135 hp at 2600 rpm; nine main bearings on crankshaft; overhead valves operated by pushrods; wheelbase 145 ins.; overall length 196 ins., distance from road to lowest point of crankcase, 8½ ins.; dual carburetors.

There are no reliable figures available for top speed, but the manager of Pacific Auto Rentals estimates that it probably would do no more than a dead smooth 80 mph.

On to the mail. As some of you are aware, the mechanics of magazine production require early deadlines. For that reason, there is a one-month lag between your letter and the answer in the column. However, all letters that request information or seem to require a reply will be answered directly. We are especially grateful for the pictures you send, but please do not pose your cars with people. Let the car itself speak for you.

According to mail received to date, Packard is the most popular automobile with Rolls-Royce and Duesenberg running in a dead heat for second. No Chryslers have been reported yet and Cadillac and Lincoln are running far behind. The most unusual car reported is a Stutz phaeton with a Murphy body, owned by a dealer in Barstow, Calif. This same dealer reports that the Mojave desert is teeming with rare classics. He has personally found such gems as the two Hispanos from the Kellogg estate and a '32 Rolls roadster.

Chicago readers will be interested to know that a reliable mechanic from Downers Grove has been added to our list on file. His name will be sent on request. Another garage with a successful history of Rolls and Pierce repairs has been located in Dallas, Texas. For Los Angeles readers, we have several names in the office. From New Jersey, a Lincoln dealer writes that his shop is well-equipped to handle the K series Lincolns and offers to recommend other shops for other classics to New Jersey owners in the Camden area. Next month, "Classic Comments" will begin the first installment of a flat-rate price list for classic cars, an attempt to furnish a standard of comparison for classic car owners who need repairs. This will not be as accurate as similar lists for mass-production cars, but it should prevent some of the conscienceless gouging that has taken place in the past.

Gordon Limbourne, Los Angeles Packard 12 specialist, contributes a valuable service note to "Classic Comments" this month. He believes that more amateur mechanics go wrong trying to fit valves to the hydraulic lifters in the Packard engine than anywhere else. His method is to bleed the lifter of all its oil by working the tiny plunger and applying pressure to the lifter arm until the lifter arm reaches dead bottom. A piece of wood, cut to size, is then wedged between lifter arm and block to hold the lifter arm back; the valve is seated and the stem is ground to approximately .025-in. clearance between stem and lifter arm. This is a laborious process but it pays off in quiet engine operation.

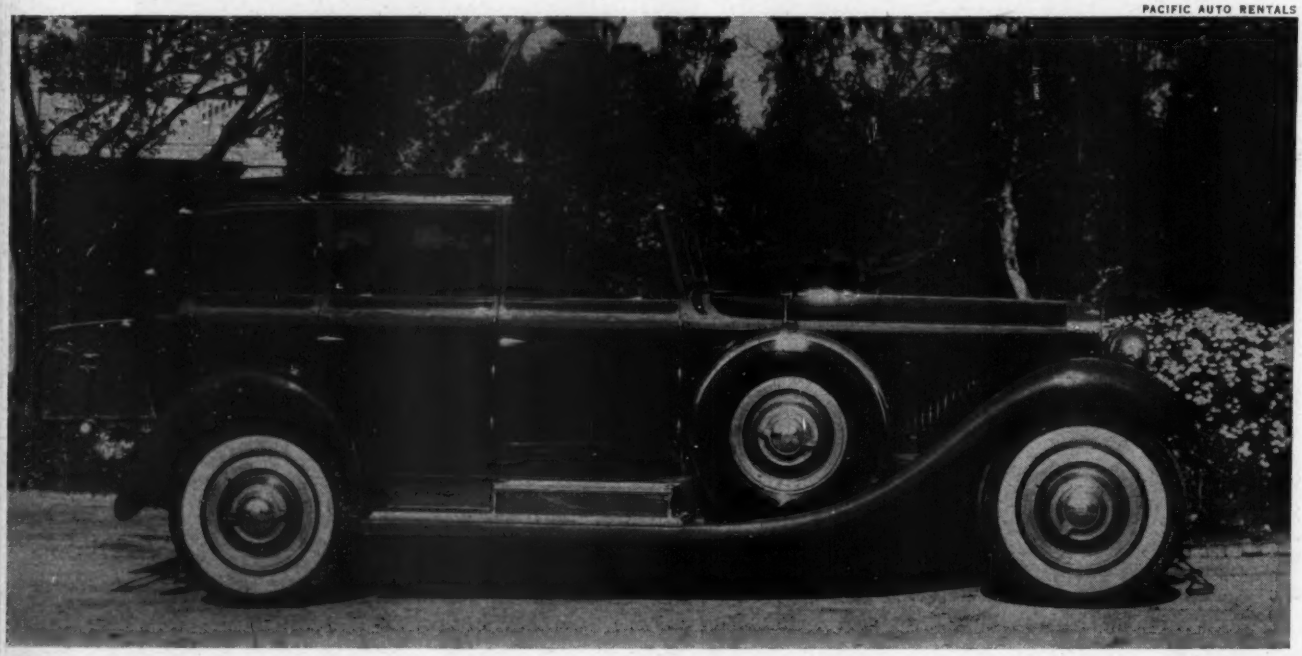
Gordon, incidentally, is taking part in an unusual experiment on the Packard 12 engine. He has bored one out to .100-in. oversize, almost twice as much as the standard rebore, and a customer is designing a new manifold using six carburetors for the 12 cyls. We'll publish the results later.

One last word about engine modifications. Does anyone know of an inexpensive method to increase fuel economy? With the ugly shadow of gas rationing darkening the classic car future, it is imperative to exchange notes now on this subject.

Two excellent Duesenbergs have been announced in the mail. Irwin Coffey of Greenfield, California owns Gary Cooper's old Derham phaeton which he has restored beautifully. And W. C. Wilkinson in Tucson, Arizona owns a Murphy convertible sedan on a 153½ in. wheelbase. Wilkinson claims 10-11 mpg in the city and a top speed of over 115 mph for the handsome 5450-lb. giant.

A few prices for Duesenbergs have been given, too. In Los Angeles, an exceptionally

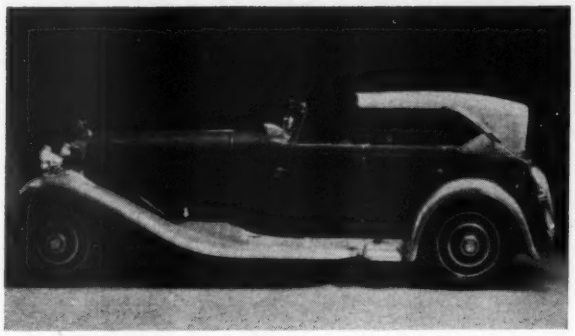
PACIFIC AUTO RENTALS

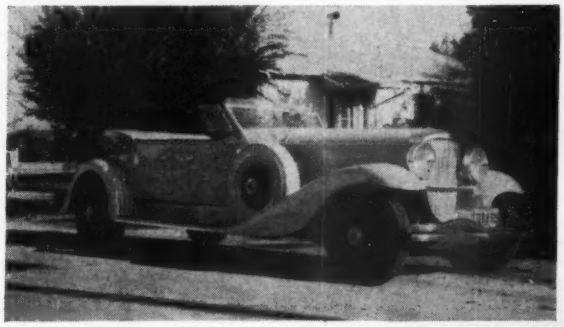


clean, 1937 Rollston coupe-roadster with disappearing top, engine excellent, went for $1,500. A Murphy convertible sedan in the Southwest is valued at $1,200 minimum. A Duesenberg Willoughby 7-pass. sedan in Chicago is for sale at $500.

In Packards, a 1931 sport phaeton is for sale in Pennsylvania at $400; a '28 sport phaeton is available for $300 in Ontario; a '37 V-12 town car in fine condition for $800 in Pennsylvania.

Rolls-Royce prices available include a 1920 chassis with an almost wrecked body for $90 in St. Louis and an immaculate P-2 phaeton just sold for $1,200 in Los Angeles. In New York, a Hibbard and Darrin 7-passenger sedan on the American Rolls chassis in perfect shape was also sold for $1,200.





HISPANO-SUIZA (above) with body by Fernandez and Darrin, was built in Paris in 1932

ORIGINAL cost of this '37 Duesenberg Phaeton (left), with Derham body and 153½ w.b., was $18,000. First owner was Gary Cooper, present owner—Irwin Coffey of Greenfield, California

DUESENBERG J convertible sedan (below), with body by Murphy, owned by W. C. Wilkinson

For those of you who are trying to build up a file of pictures I have a suggestion. Spend a couple of afternoons going through local used-magazine shops, concentrating on the quality magazines of the period between 1925 and 1931. Look with special care at *Spur, Polo, Country Life, Vanity Fair,* and *The Sportsman. Country Life* ran a monthly article on automobiles for those years and the others covered the shows and printed full-page advertisements for Duesenberg, Packard, etc. For technical details, you can always rely on the American magazine, *MoToR,* which printed a comprehensive table that covered all American cars in each issue.

Other sources of pictures are the two albums of Duesenberg shots published by Autobooks; the few collectors who have branched out into selling photographs; and occasionally the auto manufacturers. An ardent collector is George Moffitt in New York. He is very anxious to find a shot of the Excelsior town car, body by Van Den Plas, that once belonged to Texas Guinan. Can anybody help?

I saved Donald Scott's letter for the last item in the column because it raises a vital issue for classic car enthusiasts. In part, he says:

"[Jaderquist] might well ask himself: 'What can this car teach us? From our perspective, was this design a mere transitory fad, or a pertinent lesson to those planning the cars of the future?'

"The true function of the classic car is to provide an esthetic third alternative to Detroitism and to the European competition roadster with its heavily-loaded little mill. A serious study of the bodies and engines of 1930-35 would be a healthful antidote to many modern excesses both in America and in Europe.

"At least half the column should be devoted to serious discussion of the mechanics and performance of the car being described. . . . Better go easy on that esoteric cooing over who paid how much for unborn mongoose upholstery, jade steering wheels, chinchilla clutch-pedal pads, etc.; such nonsense will do classicism more harm than good in this age."

Curt and to the point, Mr. Scott. And I agree that more technical data should be given and I shall do so. Also, you are on safe ground when you argue that the excesses of classic-car construction should not be emphasized. *But,* there can be no very valuable purpose served by trying to extract a guide for the future automobile from a product of the past. The classic car engine is complex and powerful and for its particular day it was a honey. Some of our present Detroit products and European sport models owe much to the classic cars. But the classic car is no longer an important factor in the industry. Engines of the future are being built for hot rods and Indianapolis racers and sport cars—not for Rolls-Royce limousines.

The classic car can teach us little that is usable now. It is axiomatic that the value of a classic car lies almost entirely in its body and its beauty. It would be wonderful if more classic cars were being built now so that there would be something more pleasant on the highways than portholes, fins and fake spinners. But it is a fact that our present social structure cannot support the excessive cost of the handmade $20,000 automobile. The classic car is gone for good as far as America is concerned.

And so, I'm afraid, is the classic design. The classic design was built around the wheel and the engine and derived from the horse-drawn carriage. It was the transition between the horseless carriage and the purely functional transportation unit. This transition saw a number of excesses, both in engine and body, but it also produced the only esthetically satisfying automobiles ever made.

The exceptional classic car is distinguished from the ordinary by the beauty of its design, the quality of workmanship of both engine and body, and the quality of materials used in its construction. If a magnificent car happens to have luxuries that seem funny now, that is a reflection of the taste of the original owner. Such peculiar luxuries as you mention ran in fads which were often ridiculous. But they are part of the car.

Anybody who has ever owned a classic car will testify to the peculiar personality that any such automobile has. The thing actually awes its owner by its very perfection. Yet only a few classic fans ever will attribute this personality to performance and mechanics. Truthfully, the classic car owner has to put up with temperamental performance and baffling mechanical construction just to enjoy the thrill of owning a thing of beauty.

Next month, "Classic Comments" will feature the Duesenberg sport coupe built for Serge Mdivani in 1936 by Bohman and Schwartz of Pasadena. A Dayton, Ohio collector owns the car now and it still has less than 20,000 miles on the odometer. It is one of the supercharged models and the body is quite different from the standard Duese.

End of a Stranglehold?

(*Continued from page twenty-three*)

7000 rpm (though road performance suggests nearer 250 hp).

The tubular frame mounts wishbone, coil spring independent suspension at the front, with a solid rear axle hung on quarter-elliptics. Wheelbase is 98 ins. and weight is about 1500 lbs. Actual performance is not what would be expected on a power-weight basis (as we'll discuss later), top speed being around 160 mph.

Ferrari 125-C

The name Ferrari will be remembered by racing fans as the stable that raced the Alfa-Romeo G.P. cars during the '30s. It was not till after the war that the outfit began producing their own sports and racing cars (all 12-cyl.), and their first "A" car hit the tracks in late 1948. This 1½-litre (91 cu. in.) blown model has won five races since then, but has not given the 158 Alfas any real competition.

In its present form, the engine has 12 cyls. in a 60-degree V, double ohc, two valves per cylinder, insert cylinder sleeves, and a seven-plain-bearing crank. Two-stage Roots blowing is used and the peak output is stated to be 280 hp at 7500 rpm.

A tubular frame is employed with independent suspension at all four wheels through transverse leaf springs as on the Alfa; at the rear, however, the very effective deDion layout is used, where the wheels rise and fall *vertically* rather than *in an arc*, being restrained by radius arms and a hinged axle tube. This, coupled with the short wheelbase of 91 ins. and astonishingly low weight of only 1300 lbs., give the 1½-litre Ferrari terrific cornering and acceleration potentialities. Lap speed is not blinding, however, and its top timed speed was 169.0 mph at Spa.

Ferrari 4½-Litre

The Ferrari 4½-litre is the car of the year and the talk of the entire racing world. It only ran in two races last season, but even at this early stage it has shown a notable absence of "teething" troubles, serving notice on the Alfas that there is a rough, cut-throat '51 season ahead! The chassis here is the same as on the 1½-litre supercharged Ferrari, but with different fuel and oil tankage, body, etc.

The real meat is in the engine! This is the same 60-degree V-12 cyl. layout, but there is only a single ohc for each bank. Induction is through three 40-mm (1.58 ins.) carburetors in the "V," fed under ram pressure from a scoop tunnel on the hood. Otherwise, the general layout of the engine follows previous Ferrari practice. Displacement is given as 274 cu. ins., compression ratio is 14½:1, and maximum output is 315 hp at 6500 rpm. That's on a par with our hottest 270 Offys on alcohol!

Car weight is up to 1550 lbs., well over the 1½-litre job, but the additional power, especially at low rpm, gives the new 4½ Ferrari terrific road performance. Top speed is high too, with a time of 178.4 mph being recorded on the straight at Barcelona. Watch this new Ferrari!

Talbot-Lago 4½-Litre

This French car, designed by Tony Lago, was developed from an unsuccessful pre-war 4½-litre G.P. car. The chassis has been greatly improved since and the car has done fairly well in post-war racing, winning no less than 10 major "A" races to date. The Talbot is a perfect example of a full G.P. racer, built and maintained at relatively low cost, and employing many production parts. In fact, the car is almost indecently successful when we remember that it is getting along without such costly and complicated things as two-stage superchargers, deDion rear ends, alcohol fuels, etc.

In its 1950 form, the six-cyl. engine had two camshafts running high in the block, operating two inclined valves per cylinder through short pushrods, with twin spark plugs in the center of the cylinder. Bore and stroke are 93 x 110 mm (273 cu. ins.) and a seven-bearing crank is used. With three carburetors, peak power output ranges from 210 hp at 4200 rpm in long-distance tune on gas-benzol fuel to about 280 hp in sprint trim.

Front suspension is independent on wishbones and transverse leaf, with a conventional solid rear axle suspended on the usual semi-elliptic springs. The design is very straightforward and economical clear through and, as a result, size and weight are above average. Wheelbase runs 104 ins. and empty weight is 1800 lbs. Top speed is only around 150 mph, but the excellent low-rpm torque of the big unblown six-cyl. engine gives the Talbot an edge on slow courses.

BRM

These initials stand for British Racing Motors, a trust supported by over 160 British business firms who wanted to see an all-British car that could compete *and win* in European G.P. racing. They banded together some four years ago and, through contributions of money, labor, and material, set out to put a full G.P. car on the tracks by 1950. The result is a challenge to some—a disappointment to many. So far, the BRM has competed in two "A" races; it stripped its gearbox at the starting line first time out and made only a fair showing against the unblown 4½ Ferrari the second time at Barcelona.

As for the BRM specifications, they've been well covered previously (June 1950 MOTOR TREND), but briefly they are: The 1½-litre engine is a 135-degree V-16 with double ohc, two valves per cylinder with wet liners, 10-plain bearing crank, and battery-coil ignition. It is supercharged by a two-stage *centrifugal* unit and is said to develop over 400 hp at 12,000 rpm!

The frame is light alloy of welded tubular construction, with independent suspension all around through pneumatic struts (compressed air is used as the springing medium); front suspension is on trailing links and a deDion rear setup is used. Wheelbase is 98 ins. and weight runs 1600 lbs. This car was timed at 186.3 mph at Barcelona.

The Right Combination

That was last season's line-up of Formula A competitors. Actually, these specifications tell only half the story. We can easily measure factors like top speed, acceleration, braking power, etc.—but it's the *combination* of all these things, along with such unmeasurable items as road-holding and traction, that go to determine how fast a certain car is going to get around a particular Grand Prix circuit. And that's all that really counts! Let's try to compare the cars strictly on a basis of *average lap speed*.

In the first place, it is a known fact that the 158 Alfa-Romeo was definitely the fastest competitor last season on a lap speed basis. The table below shows typical lap speeds for this car under competition conditions (not time trials) on several of Europe's G.P. courses.

Now by studying, comparing and averaging the maximum lap speeds made by the other Formula A cars on these and other circuits, we can calculate what we might call a "Lap Speed Index" for each car. In other words, if we list the Index of the 158 Alfa as "100," then the Indexes of the others will indicate their approximate maximum lap speeds as a *percentage* of the Alfa's speed. For example, if the Alfa can turn a certain road circuit at 95.6 mph, and another car's index is 94, then that car should be able to lap that particular circuit at: 0.94 x 95.6 = 89.9 mph.

Below are the approximate Lap Speed Indexes for the 1950 cars as averaged from their maximum lap speeds on various courses last season:

Alfa-Romeo 158-A	100
Ferrari 4½-litre	99½
BRM	96
Ferrari 125-C	95
Maserati 4CLT/48	93
Talbot-Lago 4½	93

The next question is—why? Why is the 1½ Ferrari faster than the Maserati, which has more horsepower? Why is the BRM slower than the Alfa, though being lighter and more powerful? Why is the Alfa fastest of all?

One thing is sure—it's not the drivers! Farina couldn't trim any Alfa in a Maserati. Ascari couldn't take over a BRM and outrun the 4½ Ferrari. As long as all the drivers are reasonably skilled, they are not the deciding factor in lap speed. So let's try to dig out the reasons by looking again at the cars (in the order of their Indexes):

Alfa-Romeo 158-A: This car has a very high overall performance, a fair engine torque range supplied by the two-stage superchargers, and a fair chassis and suspension layout. We think the secret is in the excellent braking system and the especially effective streamlining, which allow a usable top road speed of about 185 mph. Its rear suspension (swing axle) is better than a solid axle, but inferior to the deDion layout from a road-holding standpoint.

Ferrari 4½-litre: This car is just about on a par with the Alfa in lap speed, as we might expect, since they're virtually equal in power and weight. A bit poorer body shape on the Ferrari cuts usable road speed to something under 180 mph, but the engine torque range is better because the unblown Ferrari induction is always under constant atmospheric pressure, whereas the pressure output of the Roots-type blowers on the Alfa drops off somewhat at lower-rpm. It appears now that some slight improvements on the 4½ Ferrari might very well put it out in front of the Alfa in '51, or at least push the Alfas so hard that they're bound to lose eventually through mechanical failure.

BRM: Here's the car that could put 'em all to shame! It packs plenty of power with good chances for getting plenty more, it has a clean body and very high usable speed (some 200 mph), and an excellent suspension layout. (It wasn't running right and couldn't have been getting over 350 hp when it clocked 186 mph at 10,700 rpm at Barce-

TYPICAL 158 ALFA LAP SPEEDS

Circuit	Place	Lap Length, Miles	Lap Speed, MPH	Remarks
Spa-Francorchamps	Liege, Belgium	8.7	115.0	Long, straight, hairpins
Silverstone	Towcester, England	2.9	92.9	Airport course
Monza Autodrome	Milan, Italy	3.9	117.4	Banked speedway with twisty road section
Rheims	Rheims, France	4.9	112.4	Flat; very fast turns
Geneva	Geneva, Switzerland	2.5	85.6	Through city streets

lona.) The brake layout and front end geometry are not too good, and there is much to criticize in the battery-coil ignition, but the one thing that is going to keep the fabulous BRM behind the pack permanently is the centrifugal supercharging system.

As you probably know, the pressure output of this type of blower varies approximately as the *square* of rpm. In other words, if the pressure is 30 lbs. at the peak 12,000 rpm, then at the lower end of the BRM speed range, which is generally considered 7000 rpm, the pressure would be only around 10 lbs.—and the actual *power* output would be much less than the other G.P. cars at the lower ends of their ranges. This effect was dramatically shown by hand-timing the new 4½ Ferrari and the BRM through a 500-yard trap as they accelerated out of a sharp corner at Barcelona; the Ferrari required 10.6 seconds to cover the 500 yds., whereas the more powerful BRM took 12.6!

For this reason, the centrifugal blower has never been used in European road racing. Why it was adopted on the BRM is a mystery! One thing is sure—until a positive-displacement blower system is installed, or until some super gearbox is developed to keep engine speed above 10,000 rpm at all times, the much-heralded BRM will never be a world beater.

Ferrari 125-C: This job has a beautiful chassis and suspension layout, but engine power, braking, and body streamlining are not outstanding. It gets around fast on slower circuits, due to its excellent road-holding and short wheelbase, but the top speed of only around 165-170 mph hurts it on the average course.

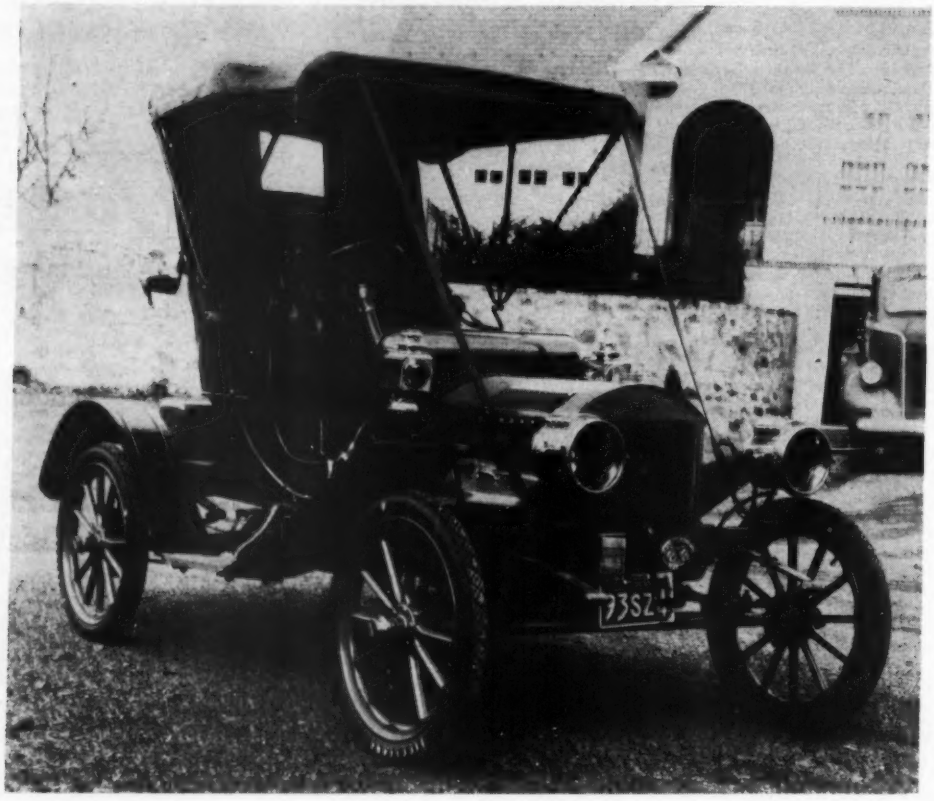
Maserati 4CLT/48: There's no cleaner car from an aerodynamic standpoint in all G.P. racing than this baby. It is super-streamlined, has a small frontal area, and is low and light. The braking system is terrific and they're getting good power from the engine (even at 250 hp), considering its basically impractical four-cyl. layout. But the rear suspension has much to be desired! The solid rear axle transfers all wheel deflection and adds greatly to the unsprung weight, which results in such poor road-holding as to cut usable top speed to 160 mph and reduces cornering efficiency by half; also the crosswise engine torque on the solid axle tends to lift the right rear wheel, and overall traction and acceleration suffers. The solid rear layout is no good anymore—G.P. competition is too tough for it.

Talbot-Lago 4½: This car does very well with what little it has! Its main disadvantages, of course, are low engine power, high weight, long wheelbase, and the solid rear axle. Its great advantage is the fact that the engine induction is unsupercharged and low rpm torque is very good. For this reason, the Talbot can stay with the Maserati with less hp and higher weight. A further, and more subtle, advantage is that this unblown job gets some nine mpg (compared with about two mpg for the blown cars) and can run the average G.P. race without a pit stop!

So there is 1950 in Formula A racing. What will next year bring? One thing is certain—there will be a terrific struggle between the Alfas and the 4½ unblown Ferrari. And if BRM will turn to the Roots blower and complete the development of the power unit, it could be a three-way fight! Alfa-Romeo has had a new 12-cyl. car in their experimental department for over a year; this may pull them out of the hole (but don't forget those inevitable teething troubles). Also, Talbot has been testing a 1½-litre 16-cyl. Roots-blown engine!

All in all, 1951 could be the hottest season in Formula A racing since the war. This is assuming that the current world military situation even gives racing a chance next year. We can only hope!

DUSTER DATA



GEARSHIFT lever is to right of driver's seat. Bulb type horn was standard equipment but buggy top was an added $75 item. Box on rear was for tools and was a stock piece of equipment

Text and Photographs by Tracy Gilpin

THE 1909 MODEL A Maxwell Junior is not a rare collector's item. It couldn't be, for the Maxwell-Briscoe Motor Co. turned out 9,000 cars in 1909 to make the Maxwell one of the big four sellers of the period—the others being Buick, Reo, and Ford. But, the car is a classic example of its day.

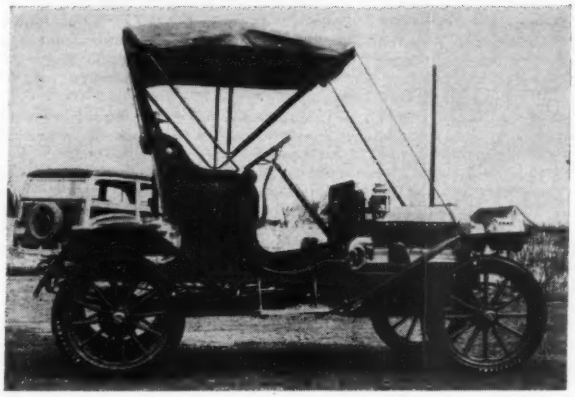
Much harder to find would be an Alden-Sampson, Carlson, Chadwick, Clark-Steamer, Eck, Elmore, Imperial, Pope-Toledo, Ross or Tincher: all automobiles that made a brief impression on the automotive-minded public, then went out of production in 1909.

About the time this Junior A roadster was made—No. 1978 to move out of John Maxwell and Ben Briscoe's Tarrytown, N.Y., plant in 1909—the Maxwell was enjoying the same relative peak of popularity experienced today by Ford and Chevrolet. I don't say Plymouth because in all fairness to the Junior A it should be pointed out that the Maxwell was the forerunner of the Chrysler line's present day bid for mass sales.

John D. Maxwell was a top notch automobile designer and engineer. He got his start with the Apperson brothers helping to create Elwood Haynes' 1894 model. Later he worked for Olds until 1903 when he talked sheet metal worker Ben Briscoe into selling his controlling interest in Buick in favor of investing in the production of a Maxwell. Briscoe went for the idea and Maxwell-Briscoe mushroomed its growth from 1905 to 1912 when United States Motors (the expanded Maxwell-Briscoe Company), by then producing seven differently named cars and controlling more than a hundred various parts manufacturers, folded.

Maxwell, with Hugh Chalmers, formed the Maxwell Motor Company, but the re-organ-

FRONT view of Maxwell Model A 1909 Roadster. Full elliptic springing can clearly be seen



SIDE view of Maxwell roadster shows spark control lever on steering column and vibrator coil mounted on dash. Only two other controls were used, brake pedal on left of steering column and foot accelerator to right. Dash lamps were standard equipment but acetylene headlamps were extras. Both the frame and the body of the Maxwell were metal

CLOSE-UP of horizontally opposed two-cylinder Maxwell. Note flywheel forward of blocks. Engine had four in. bore and four in. stroke

ized company, producers of the Maxwell and Chalmers, never fully managed to escape from the burden of United States Motors' debt and struggled into 1920 approximately $25 million in the red. Bankers who held the firms' questionable assets then hired Walter Chrysler to take over. For the next four years the medium-priced Maxwell car showed a sizeable profit and most of the 1920 debt was wiped out. But, Ford and Chevrolet practically had the small car field to themselves and the field looked lucrative and inviting.

Chrysler Corp. took over Maxwell stock shares and "The Good" Maxwell, as it was advertised during its production under Chrysler's direction, ended a 20-year career and Plymouth took its place in an attempt to gather in some of the Ford-Chevy gravy. "The Good" Maxwell under Chrysler's guidance was the refined "Perfectly Simple—Simply Perfect" Maxwell of 1909.

The restored Model A Junior Roadster illustrated here varies in only one major respect from the original. The A roadster had mudguards, but no runningboards and in place of the runningboard step plate was a small metal buggy step. This model has an 82-in. wheelbase, 56-in. tread with 28-in. artillery style wood-spoked wheels.

In refurbishing this roadster, which for 30 years was junked in a dirt-floored wagon house in Uhlerstown, Pa., nearly $1,800 was spent to bring it back to its original factory condition, and that exclusive of the present owner's countless hours of time tracking down or hand designing necessary replacement parts.

Most unique feature of the 1909 Model A Maxwell, and the Model LD (a 14 hp job with full fenders, two-in. longer wheelbase and 40 lbs. heavier overall weight) was its three-point engine suspension.

The engine and transmission were one unit with a single long bolt passing through the crankcase and fastening to the frame members on either side of the rectangular box frame approximately two feet back from the front crossmember of the frame. The third point of suspension was achieved by another bolt that passed through the transmission and through a mid-body frame crossmember just behind the dashboard location.

Broken driveshafts and engine mounts were commonplace on many cars of the first decade of the 1900s as any frame distortion was reflected to the motor mounts. Since in many instances the engine mounts were tougher than the usual wood frames, splintered frames were also to be contended with. Maxwell's three-point engine suspension, the floating power of 1909, proved practical in counteracting these breakages.

Another of Maxwell's points of departure from normal design practice of the same year was its use of steel frames and all metal bodies. The car public, which had until recently been a wagon public, retained a natural resistance to the use of metal in place of the commonplace wood bodies. Maxwell-Briscoe's instruction to its salesmen pointed up the need to stress that in any accident involving a Maxwell and the conventionally-bodied car, a crash of sufficient violence to cause a dent in a Maxwell would cause the body of the other car in the accident to splinter. No wood, aside from the spokes, not even for engine mount shims or bow supports for the $75 extra-priced buggy top, was used.

The two cyls. of the horizontally opposed engine had four in. bore and four in. stroke with a range of 150-1500 rpm and the plant could peak the roadster at 35 mph. Thermo-syphon cooling was used with a two forward speed and reverse planetary transmission. Dry battery ignition had vibrator coils mounted on the dash. Brakes were double-acting on the rear hubs with springs of full elliptic type.

The only other radical departure in engineering was the multiple disc wet clutch formed of a group of steel circular saw blanks running in oil.

A 10 gallon fuel tank under the front seat offered a cruising range under normal conditions of 250 miles. The one quart oil reservoir was good for about 100 miles of drip feed operation.

Available in one color only—speedster red—the Model A sold for $500 f.o.b. factory.

The Maxwell-Briscoe Co. was the first of the automotive manufacturers ever to attract Wall Street financing. When the factory opened in 1905 $110,000 of its original $152,000 capital was borrowed from the New Yorkers. And for only 20 per cent interest!

Of course the Maxwell car didn't make history in 1909. No one car could with nearly 200 different makes on the market. But 1909 was a historic year.

Barney Oldfield in a chain-drive Benz covered a flying start mile in 27.33 seconds to set a new automobile speed record of 132 mph but two bigger news items stole much of Barney's thunder. Louis Bleriot flew the English Channel from Calais to Dover in a daring flight hailed as one of the greatest achievements of the century. Incidentally, Bleriot covered the 31 miles in 37 minutes.

The dirigible "America" crashed in an attempt to fly over the North Pole but within a month Brooklyn explorer Frederick Cook laid claim to discovery of the North Pole on April 21. Later that year Robert Peary denied Cook's work and claimed discovery of the pole for himself. The Peary-Cook dispute kept newspaper readers entertained for months until Peary's claims eventually were substantiated and Cook's exploration of the North Pole was discredited.

To the speed fans of 1909 the big event was the opening of the Indianapolis Motor Speedway on August 19. A three-day race meet was staged and Bob Burman in a Buick captured the initial 250-miler. But tragedy marred the opening day's events as two contestants lost their lives. A Chadwick (a car fated to go out of production before the year's end) was outstanding in the second day when it won a 10-mile sprint at an average of 73 mph to shatter the American stock car record for track performance. On the third day a mechanic and two spectators were killed. Then two other contestants were seriously injured in a scheduled 300-miler that was called at the end of 235 miles due to dangerous track conditions.

Immediately thereafter it was decided that the oiled dirt surface was unsuitable and the famed brick paving was laid. Late December the same year the first trial of the bricks was made in near zero weather with both motorcycle and automobile events.

An Empire, a two-cyl. car manufactured by the Empire State Motor Co. of Rochester, N.Y., was the first car to test the new brick surface and was clocked at a slow 1:17.03 for a measured mile section. The Empire won its class for cars of under 160 cu. in. displacement by virture of being the only entry in that group. And on December 30th, the 9000th Maxwell of 1909 rolled out of the Tarrytown, N.Y. factory.

by H. Wieand Bowman

TIRES don't cause the motorist the troubles they did 20 to 30 years ago but in an era when cruising speed for the average motorist is 47 mph, your four tires can definitely be the margin of safety.

If you have a new car with new tires the mileage you can expect from your tires is largely determined by the care you give them. If you own a used car, you may be interested in knowing whether those balding jobs can be retreaded economically, and efficiently, or not.

Pre-World War II a car owner was lucky if he could put 20,000 miles on a set of tires before there was a need for replacement. Today only eight per cent of the cars on the road have tires replaced at 20,000, 51 per cent of the car owners replace or have tires recapped between 20,000 and 40,000, and 79 per cent of the cars on the road get tire replacements before 60,000. These figures clearly indicate the fact that we are getting much more mileage out of our present-day tires.

Early in 1950 the recap business was down and has been steadily decreasing since World War II: only four per cent of all the tires in use in 1949 were recaps as compared with six per cent in 1948, 14 per cent in 1947 and 31 per cent in 1946. With the Korean situation and expanding war conditions the pinch on tires is already being felt. Tire prices have been rising each month, not because of profiteering on the part of retail outlets but because of a terrific increase in the price of crude rubber, cotton fabric, carbon black and rayon. Crude rubber, for example, has increased in price an amazing 300 per cent since April, 1950, so that it certainly would seem wise to take the best possible care of your present set of tires.

Here are a few tips, with explanations: First and most important is the proper inflation of your tires. If you have a recent model car, it is probably equipped with low pressure tires which call, in most instances, for 24 psi inflation. This recommendation is cold pressure (pressure of your tires when your car has been at a standstill for a considerable period of time). If you have been driving for a half hour or more at normal speed, your low pressure tires with the 24 psi recommendation should be inflated to 27 psi. Over-the-road operation increases temperature rapidly and for every 10°F change in temperature, you may expect a one psi change in tire pressure. Tests have proved that a 30 per cent under-inflation of a tire can cause a tire-life reduction of 50 per cent.

And let's kill one common misconception quickly: Don't over-inflate your tires and figure you can go longer between tire checks. Over-inflation can be just as harmful as under-inflation. Every tire has been designed for a specific job. To give an example of what over-inflation can cause (in an extreme case), a truck tire (General Tire Model CD400), inflated to 80 psi and on a truck carrying a load of 4,000 lbs., leaves 62 sq. ins. of rubber to roll over the surface of the highway. This is the properly designed pressure for this type of tire for this load. The lazy driver who inflates the same tire to 100 psi leaves only 53 sq. ins. of rubber to roll on the highway. It certainly would seem unreasonable to expect the same amount of work to be accomplished by tires with 15 per cent less rubber on the ground. The result is that the lesser rubber area receives greater wear and the tread disappears in a hurry. Inflation above the recommended point creates more bouncing, which, in turn, gives a scuffing action on each bounce and tears rubber from the tread. As a result the tread wears smooth in the center and the designed mileage built into it is never achieved.

You may have experienced tread separation, which is the tread, or road contact area of the tire, pulling loose from the casing. This is caused by under-inflation. As your tires roll over the road, an under-inflated tire with each revolution of the wheel rolls rubber up ahead of the point of contact. The first evidence of this is cupping wear or a series of loose spots in the tread. If you permit this underinflation situation to continue, distortion or rolling up will tear the tread loose from the carcass of the tire.

The worst enemy to tire life is heat. Hot rubber wears twice as fast as cold rubber. If you permit tire temperature to build up to curing temperature of rubber, a heat blowout can occur because the compounds in the tire try to revert or devulcanize. The cause of excessive heat may be overloading, under-inflation, improper wheel alignment or the unseen reasons of intercase splits caused by bruise blows. Another cause of deterioration in tires is the accumulation of leaking brake fluid or grease and oil smeared on tires, which cause a surprisingly rapid breakdown of rubber.

The alignment problem is extremely important. Keep in mind that you can't properly align a set of front wheels unless the frame is aligned. If you bought a second-hand car, or if your car has been involved in an accident, it is wise to check the frame alignment. If the frame is definitely out of line you should either have it straightened or resign yourself to out-of-line front wheels, lessened tire mileage and the realization that your car will always pull to the shortened wheelbase side.

In buying a new set of tires remember that your tire is only as good as the tube. Watch to see that the installation of your new tires and tubes is properly done. One of the commonest causes of tube failures is bead chafing, resulting from improper soap lubrication or no lubrication at the time of tube mounting. Other causes include rough bead toes, rusty rims, improper mating of tire and rim size or driving around corners too fast. Repeated mounting or dismounting on drop center tire rims may also result in tube scuffing. Special rubber flaps on drop center rims will prevent this bead chafing or scuffing. If your car is equipped with drop center rims and at the time of purchasing new tires the tube protective flaps are twisted, creased or folded, they should not be re-used. And remember, too, that a new tire today is a major investment. It is uneconomical for the few dollars you attempt to save to use old, worn, or stretched tubes in the new tires.

If you live in an area where ice and snow are encountered in winter months, here are a few facts that should be of vital importance. This is what you can expect of stopping ability with a normal set of well-treaded tires at 20 mph: On wet concrete your best stopping distance will be 26 ft. or more, with 21 ft. being the minimum on dry concrete. By contrast, on hard-packed snow with no chains at 20 mph, your best stopping distance will be a minimum of 69 ft. On the same road conditions with chains on the rear wheels only, your minimum stopping distance will be 40 ft. On glaze ice with tires treaded with natural rubber and no chains at 20 mph your minimum stopping distance is 169 ft. Under the same conditions with tires that are pure synthetic or 50 per cent or more synthetic blend, your minimum stopping distance will be 197 ft., as compared to an 88 ft. minimum stopping distance with chains on your rear wheels.

Undoubtedly, you have seen advertisements of abrasive treaded tires (tires in which abrasive particles have been imbedded in the tread). Recent checks made by the National Safety Council on Clintonville Lake (Wisconsin) proved that on cold temperature dry ice the abrasive tires have no better gripping than normal tires. However, on high temperature wet ice, tires with abrasive particles imbedded in them stopped up to 13 per cent shorter than non-abrasive treaded tires and in their best performance stopped in 161 ft. at 20 mph. On hard-packed snow or dry ice the condition of tire treads makes absolutely no difference. Rubber tire chains on this type of surfacing condition offer no added checking and in some instances rubber tire chains actually increase skidding distance on ice. Always keep in mind that the brakes of your car only stop the wheels; tire treads stop the car.

With the increased price of new tires and a potential tire shortage in the offing, what of retreading? The retreading tire industry came into its own during World War II; however, during the past five years the cord bodies of tires, composed of nylon, rayon, cotton and wire have become far superior so that tire carcasses can easily outlast several sets of treads. On the Pacific Coast, as an indication of the efficacy of retreads, 95 per cent of all racing cars use retreads. Every AAA big car race in 1948 west of the Mississippi was won on retreaded tires. Figures would seem to indicate that on racing cars retreads outlast new tires by three to one. In pre-World War II days retreading of racing tires was frowned upon. Credit for much of the present day faith in retreading goes to Bill Krech, Inglewood Tire and Service, Inglewood, Calif., who is largely responsible for the introduction of retreading into racing centers.

Retreads, like new tires, can be good or bad. In buying a new tire it is advisable to stick to the better known brand names. While it is quite true that the cheaper off-brand name tires are frequently manufactured by the larger tire manufacturers, they can be sold at a cheaper price because inferior materials or workmanship have gone into the tires. If your old bald tire carcasses are in good shape with no internal breaks, there is no reason why you cannot retread and expect 20,000 miles—but, just as you should stick to better known brands of tires be sure that you have your retreading done by a reputable retreading concern.

In recent months much has been said about cold rubber and its longer wearing ability over other crude rubber products or synthetics. Some of these claims state that cold rubber tires increase tire mileage as much as 30 per cent. Although the process of creating cold rubber is new, the claims for longer life from cold rubber tires and cold rubber retreads seem reasonably well substantiated. Cold rubber gets its name from the fact that it is compounded at 41°F rather than 122°F for other synthetics.

What of synthetic tires as opposed to pure crude rubber tires? Many people feel that synthetics were a war substitute and are inferior to crude rubber. Actually this is not true. Because the tires are labeled synthetics don't feel that they are inferior to the crude rubber product.

Synthetic rubber is of four types. G P-S or general purpose synthetic is used for tires. Butyl, which holds air 10 times better than natural rubber, is used extensively for tubes.

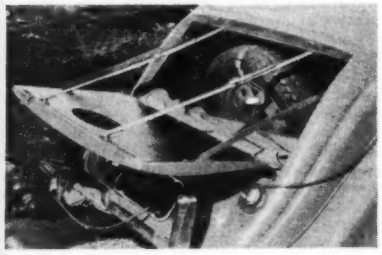
Neoprene, resistant to oil and gasoline, is used in instances where such resistance is needed. And the fourth type of synthetic, Bunan, is used for gasketing.

One final suggestion for tire life: Don't keep that spare tire locked in your trunk until you get your first flat tire. Alternate it regularly with the other tires on the car and get 20 per cent greater mileage from the entire set. It is highly recommended that all tires be rotated every 5000 miles as each wheel will have different wearing characteristics. By rotation, all tires can be expected to have approximately the same life.

Sports Trial

(*Continued from page thirty-five*)

curtains seem of good quality material, carefully constructed. The polished wood instrument panel lends a touch of refinement. Altogether the Singer Nine seems to offer an attractive solution to the problem of combining sports motoring with all around flexibility and low cost utility.



REAR deck opens for light luggage. Straps are to secure bulky loads. Note easy access to spare

GENERAL SPECIFICATIONS

ENGINE

Type	Overhead cam, in-line 4
Bore and Stroke	2.36x3.73
Stroke/Bore Ratio	1.58:1
Cubic Inch Displacement	65.5
Maximum Bhp	36 @ 5000 rpm
Bhp/Cubic Inch	.550

DRIVE SYSTEM

Transmission—Synchro-mesh, four speed: Ratios: Low—3.59:1, Second—2.27:1, Third—1.47:1, High—1:1, Reverse—3.59:1

Rear Axle—Semi-floating, spiral bevel drive, Ratio—5.43:1

DIMENSIONS

Wheelbase	91 ins.
Tread (front and rear)	45 ins.
Overall Length	149¾ ins.
Overall Height	56 ins.
Overall Width	55¾ ins.
Turning Radius	17 ft.
Weight (Test Car)	1840 lbs.
Weight/Bhp Ratio	51.1:1
Weight/Road Hp Ratio	86.2:1
Weight Distribution (Front to Rear)	50/50

TABLE OF PERFORMANCE

DYNAMOMETER TEST

1200 rpm (full load) 17 mph	8 road hp
2000 rpm (full load) 29 mph	15 road hp
3100 rpm (full load) 45 mph	(max.) 22 road hp

ACCELERATION TRIALS (SECONDS)

Standing Start ¼-mile	:22.57
0-30 mph through gears	:07.95
0-60 mph through gears	:36.40
10-60 mph in high	:42.29
30-60 mph in high	:30.56

TOP SPEED (MPH)

Fastest one-way run	64.94
Average of four runs	64.14

FUEL CONSUMPTION (MPG)

At a steady 30 mph	36.50
At a steady 45 mph	30.18
Through light traffic	30.00
Through medium traffic	26.50
Through heavy traffic	23.27

SPEEDOMETER CHECK

At 30 mph indicated 32 mph	6.6% error
At 45 mph indicated 49 mph	8.8% error
At 55 mph indicated 61 mph	10.9% error

BRAKE CHECK

Stopping distance at 30 mph	37'0"
Stopping distance at 45 mph	105'7"

Atomic Power—In Your Car

(*Continued from page seventeen*)

Specific studies have been made in material processing, radiography, liquid level indication in foundry cupolas, and thickness control in sheet steel making.

Cobalt 60 and Selenium 75 are the two isotopes, classed as gamma ray emitters, which have been used in the investigations. Radiation emitted by this class of isotopes can be used directly in a manner similar to the present application of X-ray machines. Formerly, industry often has been handicapped in its application of X-rays due to the inflexibility of permanent installations. Voltage of the X-ray tube frequently sets a limit to the depth of penetration of the rays and it is not always possible to place the tube to the best advantage. Isotopes, the Ford engineers say, have the advantage of being confined to a small capsule which can be used in the interior of the metallic structure or in a limited space.

Cobalt 60 is reported by the Ford scientists to be a highly suitable isotope for radiographic inspection of metals. It possesses penetrating power comparable to a 2,000,000-volt X-ray machine, which makes it ideal for the examination of thick sections of metals. Selenium 75 radiation, with a voltage equivalent to a 250-watt X-ray machine, is most suitable for light metal sections. The combination of the two radioactive isotopes from the atomic pile makes an excellent set-up for the radiography of a wide range of materials and thicknesses, they report. Photographic illustrations accompanying this article depict two of the atomic studies going on at Ford (page sixteen).

Another important use of radioactive isotopes in radiography is the periodic check that is made of the welds in the Ford factory's high-pressure steam lines. The condition of each weld is recorded on X-ray film. Any defective welds are readily detected and repaired.

Standard Oil Company of California is a company which also has carried on unusual research with radioactive material from the atomic pile. Piston rings and other engine parts have been made radioactive for use in friction studies by the firm. Such piston rings have been installed in a test engine, which has been run for several hours. Then, a sample of oil is taken from the engine's crankcase, and the radioactive particles worn off the rings are measured by a Geiger counter. With this test the researchers have been able to measure wear in the engine to as close as a millionth of an ounce of metal. Thus, the wear on rings through the use of different lubricating oils may be established.

In Akron, Ohio, B. F. Goodrich is conducting studies with radioactive rubber to determine how tire life may be increased. An automobile running on tires treated with radioactive materials is put through skids, quick turns and sudden stops on the firm's test track. A Geiger counter mounted behind the car measures the exact amount of rubber left on the paving of the track.

While these are only a few of the many far-reaching atomic research projects going on in auto plants and allied industries these days, available information indicates such activity will increase rapidly during coming months. Along with research in the industrial laboratory and on the test track, automobile companies are turning to the nation's scientific centers in their search for the atom's ultimate effect on motor vehicles and highway transportation.

The University of Michigan's pioneering *Phoenix Project* is expected to make important contributions to the application of atomic energy in the automotive industry. The *Project* is a $6.5 million endeavor to contribute to the "advancement of human welfare in the atomic era." Administered by the university, research programs are being financed through voluntary contributions from individuals and businesses. Over 200 separate projects already have been planned. This gigantic program is one of the very few research enterprises in the atomic energy field that is independent of government supervision.

A prospectus prepared by *Phoenix Project* officials, which details the various subjects to be investigated, reveals work will be carried on by the school's Engineering Department in an attempt to design and construct an atomic engine. Ten projects are being undertaken which, if solved, could result in a powerplant capable of driving a motor vehicle. The studies range from methods of "Shielding gamma and neutron radiation" to "Development of an electrical system which duplicates an atomic power pile to determine the distribution of neutrons in a pile."

Monetary grants to carry on other specific atomic studies relating to the automotive industry have been made to the *Phoenix Project* by two companies. At least two more firms currently are considering similar gifts to underwrite far-sighted research activities, and these may be announced by the time MOTOR TREND reaches the newsstands.

Nash-Kelvinator Corporation has made a grant of $100,000 for nuclear investigation of the preservation of food, and the improvement of metal surfaces and coatings. The latter project will seek methods of lengthening the usable life of metal parts in cars, and search out additional ways to utilize radioactive tracers for testing and improving paint, oil, plastics and other types of finishes.

In earmarking the funds, George W. Mason, president of Nash-Kelvinator, declared the *Phoenix Project* to be one of the most important efforts ever undertaken by any university.

"The atom bomb," Mason said, "is a frightening weapon of destruction but its by-products are likely to prove the most important instruments for human progress ever discovered."

General Motors is spending $1.5 million with the University of Michigan to establish an *Institute of Industrial Health*. The purpose is to promote better health for its 446,000 employees, as well as the men and women of all American industry. Representatives of the *Phoenix Project* assert that a portion of this sum will be used to do basic research in the highly specialized fields of plant health and safety in an atomic manufacturing era.

Thus, as the automotive industry steps up its use of nuclear physics in production processes, in its own in-plant research, and ultimately in atomic-powered vehicles, employees will be ready to meet the challenge of working with the atom.

So, on this April day of 1951, who is to say whether an atom car is desirable, practical or feasible? A few decades ago who would have said that the automobile was feasible?

ACCESSORY TRIALS
—Visolator

HOW CONSCIOUS are you of the condition of your oil? Do you know when to change your oil filter? If you're like many other persons, you don't pay too much attention to these things, leaving them entirely up to the service station attendant.

To enable you to tell at a glance whether your filter cartridge is permitting free flow of the engine oil, the Visolator has been introduced. This indicator is installed below the oil filter and is connected into the oil line. A glass bowl reservoir on the Visolator makes the oil visible at all times, whether the engine is running or not.

An installation of the Visolator was made on a Crosley Hot Shot to test its practicability. After the installation was made, which required only a few minutes (but in this particular instance called for a longer flex line), the engine was started. The flow of oil is into the top of and through the filter, out the bottom through one passage inside the Visolator, into the reservoir bowl, out another passage and back into the engine. It was immediately apparent that the oil flow was extremely slow, indicating a badly fouled oil filter cartridge.

It should be pointed out, however, that the color of the oil does not necessarily indicate its condition. The average oil filter will pass microscopic particles of carbon which will color the oil, but which have no appreciable abrasive action. A healthy flow of oil through the filter is the most critical factor in engine oil cleanliness—the Visolator provides a ready check on this rate of flow.

The Visolator installation is simple, it fits most filters and needs no new fittings, although in some cases it may require a longer oil filter outlet line, and usually, a re-formed outlet line. This, however, is a small price to pay for increased awareness of engine oil condition. The price of the Visolator is $2.98.

Mercury Motor Trials

(Continued from page twenty-one)

mal maintenance cost, and the average depreciation percentage.

As explained in last month's MOTOR TREND, the depreciation percentage is arrived at as follows: The average retail price of each model from the five previous years is subtracted from the new model's price. When this is averaged, it gives the average depreciation percentage, projected over a one-to-five-year period. This *should not* be construed as the *average yearly* depreciation.

GENERAL SPECIFICATIONS

ENGINE	
Type	L-head, V-8
Bore and Stroke	3 3/16 x 4 ins.
Stroke/Bore Ratio	1.25:1
Cubic Inch Displacement	255.4
Maximum Bhp	112 @ 3600 rpm
Maximum Torque	206 ft.-lbs. @ 2000 rpm
Compression Ratio	6.5:1
DRIVE SYSTEM	
Transmission—Conventional three speed. Ratios:	Low—2.82:1, Second—1.60:1, Third—1:1, Reverse—3.62:1 Merc-O-Matic torque converter and 3-speed planetary gearing
Rear Axle—Standard—3.92:1,	Overdrive—4.27:1, Merc-O-Matic—3.31:1
DIMENSIONS	
Wheelbase	118 ins.
Overall Length	206.8 ins.
Overall Height	70 ins.
Overall Width	77 ins.
Tread	Front—58½ ins., Rear—60 ins.
Turns, Lock to Lock	4
Weight (Test Car)	3760 lbs.
Weight/Bhp Ratio	33.6:1
Weight/Road Hp Ratio	49.5:1
Weight Distribution (Front to Rear)	54/46%

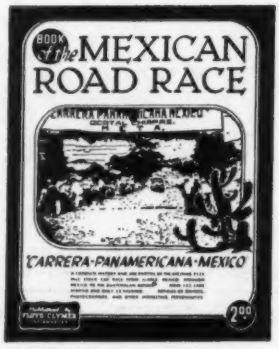
TRADE TOPICS

THE REVELL LINE OF ACTION MINIATURE PLAYTHINGS, manufactured by Precision Specialties, Inc. (Hollywood, Calif.), and introduced by the popular Model T Ford, has now been expanded to include two other classic items of bygone vintage. New road-mates of the Ford ("Granpaw's Pride 1911") for the spring season will be the famous Stanley Steamer and the old-time Packard. Each will be produced in plastic with its own special display-box "garage" in color and will be priced for volume selling at 79c each. Revell first struck its rich lode of "Americana" plaything interest in antique autos with its exact-replica Maxwell, introduced last fall. Produced with a detachable cable, so

that it can also be used as a "mantelpiece mascot," the Maxwell was principally responsible for Lewis Glaser's (the company's president) decision to make the first of the action miniatures, to enable merchants to cash in, in quantity, on collectors' interest as well as action toy appeal. The new Stanleys and Packards will also be hand action miniatures as well as completely faithful reproductions of the old cars. Both new action miniatures employ improved Controlit trigger mechanisms, removable so that the car can also be used as a desk, dresser, or mantelpiece ornament. The manufacturers point out that the Stanley Steamer has, in addition to its old-time car appeal, a real news interest in that it is "steam-driven." It may recall to a lot of old-timers the hissing, cumbersome steam-buggy that attracted admiring eyes along Fifth Avenue, and zoomed the nation's pikes and country roads at the merry clip of at least 20 mph. Instantaneous response to the early-century cars, the Maxwell and the Ford, the manufacturers feel, suggests other toy makes besides the Stanley and the Packard.

★ ★ ★

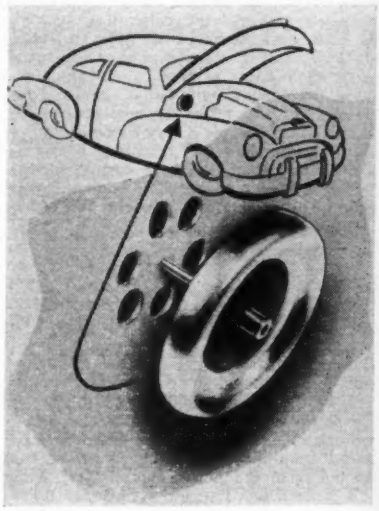
"BOOK OF THE MEXICAN ROAD RACE" is one of the newer of Floyd Clymer's 60-odd titles,



was a hit on publication thanks to its value to the American motorist visiting Mexico, as well as to racing enthusiasts everywhere. The first thing that strikes the thoughtful reader about "Mexican Road Race" is the immense task that its publisher had in gathering and organizing the exhaustive material that makes up this jumbo-sized 148-page volume. Nothing seems to have been left out of what can doubtless be called, "the biggest book ever devoted to a single automobile race." The famous 2135-mile trans-Mexican event is covered from a vast number of angles, as seen through the eyes of journalists, cameramen, race officials, drivers themselves. There are 300 well-reproduced illustrations and price is $2, from Floyd Clymer, 1268 Alvarado St., Los Angeles 6.

★ ★ ★

AN INGENIOUS NEW DEVICE THAT ELIMINATES THE NEED TO SLAM YOUR CAR DOOR to be sure it's latched is now available to motorists. Known as Pressur-Vent, it is made by the Max Cundiff Manufacturing Co., Saybrook, Illinois. Pressur-Vent opens automatically to release the air pressure created in an automobile by closing the door when all windows are shut. It is installed out of sight on the cowl. Except when needed to release air pressure, Pressur-Vent remains closed to keep out cold air, dust and engine fumes. A soft rubber seal assures an effective seal when Pressur-Vent is closed. Tests conducted by the manufacturer prove that Pressur-Vent will do the job and is easy to install in any make of automobile. Further information is available from the manufacturer.



★ ★ ★

THE TYPE OF INFORMATION THAT HAS HELPED MECHANICS OUT OF TIGHT SPOTS has been compiled and well-condensed into a new book, "Auto Repair Kinks," by Bill Toboldt, Editor of Motor Service Magazine. Into 224 pages, filled with easy-to-read diagrams, is packed a wealth of information: trouble shooting, repair tips, short cuts and special kinks. The majority of the book is taken up by the tune-up kinks for performance and economy of each standard automobile. Also included in special chapters are trouble shooting of brakes, wheels, clutches, engine knocks, transmission, plus tips on increasing mileage, decreasing oil consumption and boosting power. Available at $3.00 each, from the Goodheart-Willcox Co., Inc., T321 South Michigan Ave., Chicago, Illinois.

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For further information on any of the products listed in Trade Topics, please contact the manufacturer. Mention of MOTOR TREND will be appreciated.

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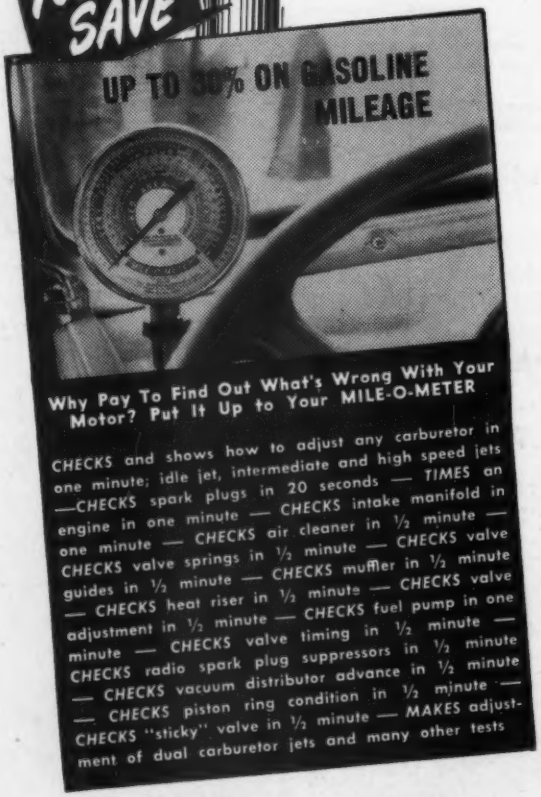

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